# VIRGINIA DEPARTMENT OF FORENSIC SCIENCE / OFFICE OF THE CHIEF MEDICAL EXAMINER

EXPANSION OF THE CENTRAL FORENSICS LABORATORY AND OFFICE OF THE CHIEF MEDICAL EXAMINER



## **ENVIRONMENTAL IMPACT REPORT**

## **Prepared for:**

#### SFCS Inc.

Virginia Department of General Services Virginia Department of Forensic Science Office of the Chief Medical Examiner

# Prepared by:



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> August, 2016 DAA No. R16388R-01E1

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# VIRGINIA DEPARTMENT OF FORENSIC SCIENCE / OFFICE OF THE CHIEF MEDICAL EXAMINER

# ENVIRONMENTAL IMPACT REPORT: EXPANSION OF THE CENTRAL FORENSICS LABORATORY AND OFFICE OF THE CHIEF MEDICAL EXAMINER

#### DAA PROJECT NO. R16388R-01E1

# INTRODUCTION

The Environmental Impact Report (EIR) is designed to satisfy the requirements in *Virginia Code* § 10.1-1188, for state agencies to prepare and submit such a report for each major state project with costs of \$500,000 or more that include one of the following activities:

- the acquisition, including gifts, leases, or purchase of land or rights thereto, for state facility construction
- construction of a facility
- expansion of an existing facility

The specific purpose of this study is to address a variety of environmental issues in the context of the project (as specified in *Virginia Code* § 10.1-1188):

- the environmental impact of the project including the impact on wildlife
- adverse effects that cannot be avoided if the project is undertaken
- measures proposed to minimize the impact of the project
- alternatives to the proposed project
- irreversible environmental changes that would result from completion of the project

#### SUMMARY

On behalf of SFCS Inc., the Virginia Department of General Services, the Virginia Department of Forensic Science, and the Office of the Chief Medical Examiner, Draper Aden Associates (DAA) has prepared an Environmental Impact Report (EIR) pertaining to the proposed expansion of the facility located at 700 North Fifth Street, in Richmond, Virginia. The expansion includes partial demolition/expansion of the existing structure, removal of an existing surface parking lot, and construction of a new building in the parking lot area.

The project is formally identified as "Expansion of the Central Forensics Laboratory and Office of the Chief Medical Examiner." For convenience, in this report we typically reference the project as "Central Forensics Laboratory" or simply "CFL."

Salient risks and potential impacts associated with the project are summarized below.

**Impacts to the natural environment.** We find no evidence of any natural features of special interest within the proposed *project area*. More specifically, we find no evidence of any endangered / threatened / unique species or ecosystems within the proposed *project area*.

The proposed project consists of the redevelopment of a previously developed area. No natural features or natural conditions of interest are present in the project area. During demolition and construction, the project will incorporate the controls deemed necessary to manage stormwater, and erosion and sedimentation.

In the absence of any natural features or conditions of interest, and in view of the nature of the project, proceeding with the proposed project is *not* likely to adversely affect the natural environment.

**Impacts to cultural resources.** The *project area* is located in the northeastern corner of the *Jackson Ward Historic District*. The Jackson Ward Historic District was listed in the National Register of Historic Places during 1976 and designated as a National Historic Landmark during 1978.

No surveyed historic structures are located within the project area. Conversely, a number of surveyed structures in the Jackson Ward Historic District are listed as being (or having been) located in relatively close proximity to the project area, and perhaps within the area of potential indirect (visual) effects.

Of the various surveyed structures in the vicinity of the project area, all but one (*Third Street Bethel African Methodist Episcopal Church*) have been demolished (most having been replaced by components of Virginia Biotechnology Research Park).

Third Street Bethel African Methodist Episcopal Church (DHR resource 127-0274 or 127-0237-0698) is located at 614-616 North Third Street, which is approximately one block west of the project area. This structure is a contributing resource in the Jackson Ward Historic District and is listed on the National Register of Historic Places (1975) and the Virginia Landmarks Register (1975). The project area is visible from the north end of the church.

No surveyed archeological resources are located within the project area. The existing facility covers the entire block. Because of the highly disturbed nature of the project area, the probability that intact archeological resources are present within the project area is deemed relatively low.

During 2016, DAA conducted a geotechnical study of the northeastern half of the project area (in the existing parking lot). Fifteen geotechnical borings were advanced in the project area, using hollow-stem augers with split-spoon samplers. Boring depths ranged from 25 feet below ground surface to 110 feet below ground surface. Fill material was encountered in all borings, ranging in thickness from approximately 2 feet to approximately 33 feet, with a median thickness of 6 feet.

Because of the possibility of encountering buried cultural historic resources, geotechnical personnel were asked to pay particular attention to the presence of man-made materials in the subsurface.

Historic cultural materials (mostly brick debris) were observed in 7 of the 15 borings. Cultural materials observed within the 0-6 foot interval of fill are most likely related to the regrading of the project area subsequent to demolition of all historic residential structures within the block, and prior to development of the existing facility. For example, material observed in boring B-10, between 0 feet and 5.5 feet, is described as "construction debris (brick, roof slate, concrete)". Given the presence of roof slate (as derived from historic residential structures), these materials might more accurately be described as "demolition debris", rather than "construction debris" (as derived from construction of the structures that currently occupy the project area).

None of the borings encountered auger refusal either within, or at the base of, the fill material, suggesting that (1) all of the man-made materials encountered represent demolition debris and that (2) none of the borings encountered intact residential building foundations.

Anomalously thick sections of fill material were observed in some borings, particularly in B-05 (33 feet) and B-15 (25 feet). Since the project area was almost completely developed by 1877 (with the last lot having been developed by 1925), we surmise that most of the fill material encountered below a depth of about 6 feet below grade was used to fill topographically lower areas in order to facilitate the construction of houses within the project area during the late 1800s.

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Most of the cultural materials encountered in fill material consist of brick fragments; however, fragments of *coal* and one small fragment of *ceramic pottery* was recovered from a split-spoon sample (28-30 feet) within fill material (0-33 feet) in boring B-05. The presence of these materials within a split-spoon sampler, above the base of the fill, indicates that these materials are entrained in

the fill material, and do *not* represent intact artifacts from whatever may have been present in that area *prior to* filling the swale.

Based upon the results of research and observations made during drilling, we find no evidence that significant archaeological resources remain in the project area. Nonetheless, in the event that archeological artifacts are discovered during demolition and/or construction, DFS shall notify DHR.

Proceeding with the proposed project is *not* likely to adversely affect any historic cultural resources.

**Impacts to the built environment.** Existing improvements in the *project area* consist of the building that currently serves as central offices for the Virginia Department of Forensic Science and the Office of the Chief Medical Examiner, along with a paved parking lot.

A new building will be constructed in the area, in which the parking lot is currently located. The existing building will be modified to increase the available floor space. The proposed modifications will include a parking deck. The project will *not* alter existing patterns of traffic flow.

Short-term lane closures are anticipated, in order to off-load construction equipment and materials (for example). DFS / OCME is cognizant, however, of the fact that North Fourth Street and North Fifth Street are relatively significant arterials, and will avoid lane closures along either street to the extent deemed practicable.

**Risk from regulated substances.** A review of historical sources revealed that an *automobile repair facility* (Oscar R Miller) was located in a residence at 729 North Fourth Street from before 1955 until after 1960. Mr. Miller had lived at that location since before 1946.

The facility may or may not have sold gasoline. Regardless, any contaminated soils that may have been associated with the former automotive repair facility would have been excavated during construction of the existing building, and removed from the property. For that reason, the historical automotive repair facility does *not* appear to warrant further consideration, in the context of this condition.

A review of historical sources revealed that a formerly private garage located at 410 East Jackson Street was used as an automobile repair facility (Grant's Auto Repairs), from before 1951 until after 1955. By 1969, the automobile repair facility located at 410 East Jackson Street had been demolished.

The facility may or may not have sold gasoline. Regardless, any contaminated soils that may have been associated with the former automotive repair facility would have been excavated during construction of the existing building, and removed from the property. For that reason, the historical automotive repair facility does *not* appear to warrant further consideration, in the context of this condition.

Proceeding with the project is *not* likely to adversely affect human health, as associated with the potential presence of regulated substances (hazardous wastes, petroleum products) in the subsurface.

**Risk from asbestos-containing building materials.** According to City of Richmond records, the existing building was constructed during 1998. Based upon the reported date of construction, the probability of encountering significant amounts of asbestos-containing building materials during the partial demolition of the existing building is deemed inconsequential.

Accordingly, DGS does *not* intend to conduct any inspections for asbestos-containing building materials in connection with the proposed project. According to SFCS personnel, the design firm will place a note on demolition drawings indicating that an asbestos inspection will *not* be necessary.

Proceeding with the proposed project is *not* likely to adversely affect human health, as associated with asbestos-containing building materials (provided that any remaining asbestos-containing building materials are properly managed).

**Risk from lead-based coatings.** As noted above, according to City of Richmond records, the existing building was constructed during 1998. Based upon the reported date of construction, the probability of encountering significant amounts of lead-based coatings on building components during the partial demolition of the existing building is deemed inconsequential. Accordingly, DGS does not intend to conduct any inspections for lead-based coatings in connection with the proposed project.

Proceeding with the project is *not* likely to adversely affect human health, as associated with lead-based coatings.

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In summary, DAA finds that proceeding with the proposed project will *not* have significant adverse effects on the natural environment, historic cultural resources, or the built environment.

Similarly, we find that proceeding with the proposed project will *not* have significant adverse effects on human health, as may be attributed to regulated substances, asbestos, or lead-based coatings.

#### 1.0 PROJECT IDENTIFICATION AND DESCRIPTION:

DEQ guidance for preparing an EIR (DEQ, 2013) recommends that the document contain a section referenced as "*Project Identification and Description*." DEQ suggests that the "*Project Identification and Description*" section include the following information:

- "The project should be given a title for easy identification.
- "A contact person within the sponsoring (or proponent agency) should be indicated.
- "If applicable and available at the time of submitting the EIR, capital budget appropriation data (agency code, project code, budget item, and the budget biennium) should be included.
- "The location of the project must be clearly identified on a U.S. Geological Survey topographic map, or its equivalent, and a site plan.
- "The EIR must fully describe the project and, in particular, aspects of the project that may cause direct or indirect environmental impacts. For example, it must discuss provisions for utilities such as existing and proposed facilities for providing potable water and wastewater treatment, including intake or outfall locations, expected additional demands, and facility capacities.
- "Description of the site must be thorough and include information on existing or proposed storage tanks (number, capacities, spill prevention measures, and containment plans) as well as provide some history on previous use, prior fish kills, and petroleum releases in the project vicinity.
- "The purpose of this section is to make the reviewer aware of what is being proposed, important design features, how the facility will be operated, and the purpose of the facility."

This section, and the following two sections, is intended to address "project identification and description." This section describes the project and is intended to outline the general architectural, functional, planning and programming aspects of the project (to the extent currently known).

The term "project area" is restricted to the footprint of the proposed renovation work. The term "study area" consists of the project area and adjacent areas that may either affect, or be affected by, the project. The footprint of the study area may vary, depending upon the nature of the resource under consideration.

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# 1.1 Project Title

The formal title of the proposed project is "Expansion of the Central Forensics Laboratory and Office of the Chief Medical Examiner." For convenience, in this report we typically reference the project as "Central Forensics Laboratory" or simply "CFL."

# 1.2 Proponent Agency / Project Contact

Virginia Department of Forensic Science

Mr. David Barron Deputy Director telephone: 804 - 786 - 2281

e-mail: David.Barron@dfs.virginia.gov

# 1.3 Capital Budget Appropriation Data

Key information pertaining to the budget for this project is summarized as follows:

Agency Code 778

Project Code
 778 - 18167 - 000

Appropriation Title
 C-44 / Chapter 2

Budget Biennium 2014-2016

Total project budget \$138,000,000

Construction budget \$100,000,000

## 1.4 Project Jurisdiction

The jurisdiction of the project is the City of Richmond, in the Commonwealth of Virginia.

#### 1.5 Location

The *project area* is located in Virginia Biotechnology Research Park, and consists of the area bounded by 700-block North Fifth Street (southeast), 400-block East Jackson Street (southwest), 700-block North Fourth Street (northwest), and Duval Street (northeast) (FIGURE 1A, FIGURE 1B, FIGURE 2A, FIGURE 2B; APPENDIX 1). The physical address currently assigned to the project area is 700 North Fifth Street.

#### 1.6 Virginia Biotechnology Research Park

The subject project is an integral part of the Virginia Biotechnology Research Park, which is described as a life sciences community adjacent to the Virginia Commonwealth University (VCU) Medical Center. The Park houses over 60 entities, including private sector companies, research institutes, non-profit organizations, state laboratories, and federal laboratories, on its 34-acre campus. A map showing the components of the Park is presented in APPENDIX 1.

Key member organizations in the Park include the VCU Innovation Gateway, the Altria Center for Research and Technology, United Network for Organ Sharing, True Health Diagnostics and the Virginia Division of Consolidated Laboratory Services.

The Park is managed by a board of directors consisting of not less than nine nor more than 15 members, three of whom are the President of Virginia Commonwealth University, the Mayor of the City of Richmond, and the Secretary of Commerce and Trade for the Commonwealth, each of which serve as directors during their terms of office.

The proposed project (known within the Park as "Biotech Two") is home to both the Virginia Department of Forensic Science (DFS) and the Office of the Chief Medical Examiner (OCME). Testing in the areas of controlled substances, firearms, tool marks, forensic biology, forensic toxicology, latent prints, questioned documents and trace evidence, are carried out in the Central Forensic Laboratory of DFS.

The Laboratory also houses a training section, which certifies breath alcohol instruments and trains operators in their use, and also trains law enforcement personnel in crime scene processing and evidence handling.

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Other components of the Park, which are adjacent to the project area, are:

Biotech 6 (southwest) 600 North Fifth Street (23219)

> The Division of Consolidated Lab Services (DCLS) is under the Virginia Department of General Services. DCLS performs over 6 million public health and consumer protection tests a year for agencies of the Commonwealth of Virginia, local government, federal agencies and other states. DCLS is Virginia's confirmatory laboratory for the national Laboratory Response Network, and is the PulseNet Regional Laboratory for the mid-Atlantic region.

> DCLS is a member of the Food Emergency Response Network and the Radiation Emergency Analytical Laboratory Network, and provides emergency analytical support for Virginia, neighboring states and federal agencies, particularly in response to terrorism, public health and environmental emergencies throughout Virginia and the Central Atlantic states.

> The Virginia Department of Agriculture and Consumer Services (VDACS) also has four laboratories located in Biotech Six. They include the Virginia Seed Lab, Plant Pathology, Metrology and Processed Foods.

Biotech 7 (northwest) 700 North Fourth Street (23219)

Biotech Seven is home to the headquarters office and data center for the *United Network* for Organ Sharing (UNOS), which is a non-profit, scientific and educational organization that administers the only Organ Procurement and Transplant Network in the United States. The Network was established in 1984 by the U.S. Congress.

The Organ Center operates 24 hours per day, 365-days per year and is staffed by specialists who coordinate with all the organ transplant hospitals and organ procurement organizations the United States. In addition to matching donors with recipients, UNOS coordinates transportation for organs and serves as a resource for the transplant community. UNOS also maintains a national database of all transplant outcomes since 1988, making it the most comprehensive research source of its type in the world.

BioTech Seven is also the location of the National Donor Memorial, a 10,000 square-foot memorial garden to recognize the donors who have given the gift of life.

# Biotech 8 (southeast) 737 North Fifth Street (23219)

*True Health Diagnostics* is an innovative diagnostics company focused on preventing chronic disease in order to empower physicians and other medical specialists to achieve better patient health outcomes. They specialize in advanced clinical laboratory testing, which enables healthcare providers to more accurately diagnose, manage, and prevent the progression of cardiovascular diseases, genetic disorders, diabetes, and other metabolic conditions.

Biotech 9 (south)601 East Jackson Street (23219)

Biotech Nine is home to the *Altria Center for Research and Technology*. Opened in late 2007, it employs approximately 600 scientists, engineers and support staff. The Center is designed to promote collaboration and creativity and to develop technologies that improve Altria Group's operating companies' current products and lead to innovative new products. This state-of-the-art research center is the largest single private sector investment in the Research Park and the City of Richmond.

In addition to the main research and office building, the project also includes a threequarter acre urban park and gathering place with water features, landscaping, and permanent all-weather pavilion.

# 1.7 Purpose of Proposed Action

The purpose of the proposed project is to provide additional space to the *Virginia Department of Forensic Science* (DFS) and the *Office of the Chief Medical Examiner* (OCME), by significantly expanding their existing facilities.

#### 1.8 Project Description

At present, the facilities used by the *Virginia Department of Forensic Science* (DFS) and the *Office of the Chief Medical Examiner* (OCME) occupy the southwestern half of the block bounded by 700-block North Fifth Street (southeast), 400-block East Jackson Street (southwest), 700-block North Fourth Street (northwest), and Duval Street (northeast). A parking lot, paved with asphalt, occupies the northeastern half of the block.

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The proposed project consists of replacing the existing parking lot with a multi-level structure that will include underground parking as well as new space for offices and laboratories. At least two options (illustrated in APPENDIX 1) are being explored for the expansion:

- expand existing facility upward + construct a multi-level structure in the parking lot area
- demolish existing facility + construct a larger multi-level structure in the parking lot area

In either case, the project will involve removal of the existing parking lot and excavation of that area to a significance depth. Accordingly, the most significant impacts to either the *natural environment* or *cultural resources* would be associated with excavation of the northeastern half of the project area.

In either case, the project will involve removal of at least some portion of the existing facility. Accordingly, the most significant potential impacts to *human health* associated with the project would be associated with asbestos-containing materials and lead-based paints.

Additional details concerning various aspects of the project are presented in the *Space Expansion Study: DFS and OCME Central Facility – Richmond, Virginia*, as prepared by Commonwealth Architects and Wiley Wilson (dated June 7, 2013; APPENDIX 1).

# 1.9 Justification for Proposed Project

The Department of Forensic Science (DFS) and the Office of the Chief Medical Examiner (OCME) have shared space in the current facility for 15 years. Having both agencies under one roof has provided efficiencies for the subset of cases which require work to be performed by both DFS and OCME. Because of significant changes for both organizations during that time, the existing facility is no longer adequate for either DFS or OCME to operate efficiently. Whereas there are some significant similarities between the two agencies, each organization has different specific needs that are driving the proposed project.

An overview of those needs, which provide justification for the proposed project, are summarized as follows:

• OCME's current workspace is insufficient to properly house its staff, which has doubled since first occupying the facility 15 years ago

In the autopsy rooms - the heart of OCME's mission - overcrowding routinely reaches levels that teams working on autopsies are beginning to physically bump into each other while performing their work, which reduces safety to workers (given the routine use of very sharp instruments, along with the potential exposure to tissue and fluids that may harbor infectious diseases).

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Because of the large staffing increases at OCME, spaces that were designed for one employee are being shared by two, or even three, employees. Other employees have to use the hallways as workspace, creating a more chaotic and less productive environment.

Because of current space limitations, some employees are working in nearby leased space. Their need to regularly return to the main OCME facility (for meetings and records) significantly reduces their efficiency.

Workforce projections call for OCME staff to double in size again in the next 13 years. Given the current lack of space, it will be impossible for OCME to accommodate the expected increase in personnel without a larger facility.

# • OCME's current workspace is inadequate to house both current equipment and newer investigative tools that will be coming online in the next 1-10 years.

OCME lacks adequate storage space for cadavers donated to the state anatomical program, which forces OCME to decline nearly half of the cadavers that are offered, thereby resulting in a shortage of bodies at a time when the Commonwealth is seeing a growth in enrollment in Medical and Osteopathic schools.

OCME is also being forced to dispose of some tissue samples sooner than standard practice would indicate, because of insufficient space in the tissue storage bank.

OCME is acquiring new, productivity-enhancing, histology equipment that will lessen the amount of time it takes to process tissue samples. The current facility has insufficient space to house this new equipment.

OCME needs to bring MRI and CAT screening equipment on line. These imaging methodologies are becoming standard equipment in Medical Examiner offices nationwide, but are unable to be deployed at the existing facility because of insufficient space.

#### • DFS staffing needs have grown since becoming a standalone agency

Since moving into its current facility, DFS staff has increased by ~50%. The number of staff is projected to continue rising as new investigative methodologies come on line, and as appellate courts hand down decisions requiring additional in-person staff testimony concerning investigative methods in trials across Virginia.

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Whereas forensic science work has been conducted in other agencies since the 1970s, such work was consolidated into DFS as a separate agency on July 1, 2005. Some of the functions that were previously performed by other agencies, but became the responsibility of DFS include: purchasing, budgeting, financial and informational reporting, grants management, accounts payable, and human resources. None of these functions was anticipated when the current facility was built; therefore, there is insufficient space to accommodate these functions.

#### • DFS is also facing significant space issues in terms of its current tenancy

In 2006 the Governor recognized that not only had DFS reached full capacity of its space, but also that it had vacant scientific and administrative positions waiting to be filled, and case submissions were continuing to rise. In response, DFS was given both approval and funding to lease space at a facility being constructed across the street from the Central Forensic Laboratory.

The current lease will soon expire (2016), with no prospect of a renewal or an extension, given the recent change in building ownership. These DFS operations must move to another facility.

# • DFS's current workspace is inadequate to efficiently house current scientific equipment and personnel

The addition of scientific equipment to handle both the volume and complexity of cases has resulted in an overflow of equipment purchased for one section into the lab space of other sections. This condition creates for an inefficient work flow and ultimately increases the amount of time it takes to process some of the evidence received in criminal cases.

In order to create more space in the labs themselves, some scientists have had their desk space moved away from the workbench or, in some instances, moved to another floor of the facility. This situation creates an inefficient workflow and further slows down processing productivity.

#### 1.10 History of the Proposed Action

As noted above, by 2006, the administration had recognized that (1) DFS had reached full capacity of its space, (2) vacant scientific and administrative positions could not be filled because of the lack of space, and (3) case submissions were continuing to rise.

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In response to these conditions, DFS was given both approval and funding to lease space at a facility being constructed across the street from the Central Forensic Laboratory. The current lease will expire this year, with no prospect of a renewal or an extension (because of a change in building ownership). These DFS operations must move to another facility.

DFS first considered leasing a different facility in order to address those growing needs. DFS explored a number of potential opportunities, with particular interest in three sites:

- BioTech 8 / North Fifth Street (across from existing facility)
- AMF / 8080 AMF Drive (Mechanicsville)
- Phillip Morris USA / 2001 Walmsley Boulevard (Richmond)

Additional information pertaining to alternative sites is provided in APPENDIX 1.

An assessment of potential lease sites indicated that leasing would require making a minimum of \$50,000 in unrecoverable leasehold improvements (such as installation of specialized plumbing and ventilation systems required for safe and efficient operation of the Department of Breath Alcohol laboratory).

Additional large and unrecoverable leasehold improvements would be needed to recreate the Forensic Science Academy's mock crime scene training rooms used to train dozens of law enforcement personnel from across the Commonwealth.

Whereas DFS would have to make similar investments in a purpose-built Commonwealth-owned facility, the Commonwealth and the taxpayers would no longer bear the risk and cost of having to recreate those facilities each time the lease expires.

Based upon the assessment of leasing options, DFS determined that some form of expansion to the existing facility would be in the best interest of the Commonwealth, and the taxpayers who support these facilities.

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#### 2.0 AFFECTED ENVIRONMENT

DEQ guidance for preparing an EIR (DEQ, 2013) recommends that the document contain a section referenced as "Affected Environment." DEQ suggests that the "Affected Environment." section:

- "identify sensitive environmental features that may be affected by the project
- "describe the land area, topography, and natural and physical features of the land
- "describe existing structures or facilities affected by the project
- "describe land uses on abutting or adjacent parcels, and on other parcels likely to be affected by the proposed facility
- "include applicable regional plans and local ordinances (including those developed pursuant to the Chesapeake Bay Preservation Act) and plans such as locally-developed watershed management plans, comprehensive plan recommendation of the local jurisdiction for the property and surrounding areas (if available), and state and locally-adopted transportation plans."

Further, DEQ indicates, "The purpose of this discussion is to establish baseline information for the impact analysis which follows and to identify features that require specific designs or that limit design alternatives."

In accordance with DEQ guidance, SECTION 2 (Affected Environment) provides descriptive information about the *study area* (in general) and the *project area* (in particular), whereas information pertaining to impacts and mitigation are presented in subsequent sections.

The information contained in SECTION 2 (which is divided into five sub-sections) is based upon publicly available information, privately available information provided by others, and on-site observations made by DAA.

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# 2A AFFECTED ENVIRONMENT PHYSICAL CHARACTERISTICS

Information concerning the natural physical environment of the *study area* (in general) and the *project area* (in particular) is provided in this SECTION. Supporting documentation is provided in APPENDIX 2A.

## 2A.1 Topography

DAA reviewed the USGS 7.5 minute topographic map of the Richmond, Virginia, quadrangle (FIGURE 1, APPENDIX 1).

The *project area* is located in the northeastern portion of a large, broad upland terrace, which is deeply incised to the north, northeast and east by Bacons Quarter Branch and Shockoe Creek.

In the general vicinity of the *project area*, the topography slopes gently toward the northeast. Within the *project area*, however, the surface of the ground has been graded and paved to slope toward various stormwater conveyance features.

#### 2A.2 Surface Water Hydrology

Based upon a review of surface topography, surface water the *project area* would be expected to flow naturally toward the northeast, toward the confluence of Bacons Quarter Branch and Shockoe Creek, ultimately discharging to the James River.

Multiple stormwater drains are located on the surrounding streets. In the presence of a stormwater conveyance system, actual patterns of surface water flow may differ substantially from natural patterns of flow.

#### 2A.3 Groundwater Hydrology

Based upon a review of surface topography, groundwater beneath the *project area* is expected to flow toward the northeast, toward the confluence of Bacons Quarter Branch and Shockoe Creek, ultimately discharging to the James River (FIGURE P1, APPENDIX 2A).

All references, in this report, to the hydrogeologic relationships between different facilities (*upgradient*, *downgradient*, *cross-gradient*) represent estimates based upon topographic analysis.

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*Note.* Groundwater flows from areas of relative high pressure to areas of relative low pressure. Although the direction of groundwater flow often mimics topography (especially in near-surface, unconfined aguifers), such is not always the case (especially in deep and/or confined aguifers).

# **Geological Conditions**

The study area is located within the Fall Zone, which is a broad boundary between the Coastal Plain and Piedmont physiographic provinces. The Fall Zone is characterized as the contact between resistant crystalline (metamorphic and igneous) rocks of the Piedmont province (west) and overlying less-resistant, marine and non-marine sedimentary strata of the Coastal Plain province (east).

Based upon a review of a geologic map (FIGURE P2, APPENDIX 2A) and cross-section (FIGURE P3) of the Richmond quadrangle (Daniels and Onuschak, 1974), the project area is underlain by regressive fluvial clays, clayey silts, and sands and gravels (that is, deposited by a river system as relative sea level was falling) (map unit "sg").

The regressive sedimentary deposits overlie transgressive marine gray, blue-gray, to green clayey silts (that is, deposited in a marine environment as relative sea level was rising) (map unit "cs"). The age of these sedimentary units is not specified, but is likely to be of latest Miocene to early Pliocene age, and perhaps younger (all Neogene in age, however).

The sedimentary strata of Neogene age overlie glauconitic clayey silt and quartz sand (Nanjemoy Formation, Eocene age), gray clay with glauconite (Marlboro Formation, Eocene age), and glauconitic clayey silt and quartz sand (Mattaponi Formation, probable Paleocene age) (collectively shown as map unit "TK"). All of these units were deposited in marine environments, and some units are fossiliferous.

The sedimentary strata of Paleocene / Eocene (Paleogene) age overlie significantly older, light colored sands and gravels, with interbedded clay and plant fragments (Patuxent Formation, Potomac Group; early Cretaceous age) (map unit "Kptx"). The Patuxent sediments were deposited in fluvio-deltaic environments.

The sedimentary strata of Cretaceous age overlie igneous rock (Petersburg Granite) of Mississippian-age (map unit "Pzpb"). The boundary between the granite and overlying sedimentary strata represents a significant unconformity (that is, a large amount of time that is *not* represented in the rock record).

According to a generally east-west geologic cross-section that passes the project area approximately four blocks to the south (FIGURE P3, APPENDIX 2A), the Petersburg Granite is likely to be encountered at depths of approximately 130 feet to 140 feet below the ground surface.

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A review of the geologic map of the *project area* did *not* reveal any evidence of mining, mineral resources, or geologic hazards.

#### 2A.5 Geotechnical Soil Conditions (ASTM)

During 2016, DAA conducted a geotechnical study of the northeastern half of the project area. Fifteen geotechnical borings were advanced in the project area, using hollow-stem augers with split-spoon samplers. Boring depths ranged from 25 feet below ground surface to 110 feet below ground surface (APPENDIX 2A).

Fill material was encountered in all borings, ranging in thickness from approximately 2 feet to approximately 33 feet, with a median thickness of 6 feet (TABLE, APPENDIX 2C).

Because of the possibility of encountering buried cultural historic resources, geotechnical personnel were asked to pay particular attention to the presence of man-made materials in the subsurface. These aspects of the subsurface exploration program are discussed in a subsequent section (Historic Cultural Resources).

Sedimentary strata of Tertiary, and perhaps Cretaceous, age were encountered in each boring from beneath the fill to the bottom of boring. Shell fragments were observed in just one boring (B-05, below 50 feet), indicating that at least some portion of the sedimentary sequence was deposited in marine conditions.

As noted above, according to a generally east-west geologic cross-section that passes the project area approximately four blocks to the south (FIGURE P3, APPENDIX 2A), the Petersburg Granite is likely to be encountered at depths of approximately 130 feet to 140 feet below the ground surface.

Material described as "partially weathered rock" was noted in boring B-03 (88 feet to 92 feet below grade) and in boring B-04 (93 feet to 95 feet below grade). Given that the "weathered rock" is underlain by significant thicknesses of sandy silt and clay at both locations, we infer that the "partially weathered rock" is a weakly cemented layer of sandstone or siltstone. None of the borings appear to have encountered the Petersburg Granite.

## 2A.6 Agronomic Soil Conditions (USDA)

DAA reviewed soils maps of the *study area* published by the United States Department of Agriculture, Soil Conservation Service (APPENDIX 2A).

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The *project area* is mapped as being underlain by two soil units:

- "Udorthents-dumps complex, pits" (map unit 40) (northern half of project area)
- "Urban land" (map unit 41) (southern half of project area)

Comment. "Orthents" are primarily "Entisols" on recent erosional surfaces. The erosion may be geologic or may have been induced by cultivation, excavation, mining, or other activities. Any former soil that was on the landscape has been completely removed or so truncated that the diagnostic horizons for all other orders do not occur. "Entisols" is a more general classification for soils that have little or no evidence of the development of pedogenic horizons.

With regard to potential for "corrosion of concrete," neither soil unit is rated.

*Background.* Risk of *corrosion of concrete* pertains to soil-induced electrochemical or chemical action that corrodes or otherwise weakens concrete. The rate of corrosion of concrete is based mainly on the sulfate and sodium content, texture, moisture content, and acidity of the soil.

Special site assessment and design may be needed if the combination of factors results in severe hazard of corrosion. We note that the concrete in installations that intersect soil boundaries (more than one soil type) is more susceptible to corrosion than the concrete in installations that are entirely within one kind of soil.

With regard to potential for "corrosion of steel," neither soil unit is rated.

*Background.* Risk of *corrosion of steel* pertains to soil-induced electrochemical or chemical action that corrodes or otherwise weakens *uncoated* steel. The rate of corrosion of uncoated steel is related to such factors as moisture content, particle-size distribution, acidity, and electrical conductivity of the soil.

As noted above, special site assessment and design may be needed if the combination of factors results in severe hazard of corrosion. We note that the steel in installations that intersect soil boundaries (more than one soil type) is more susceptible to corrosion than the steel in installations that are entirely within one kind of soil.

#### 2A.7 Flood Plain

DAA reviewed portions of the FEMA flood map for City of Richmond, Virginia, and Incorporated Areas (Panel 41 of 100, Map Number 5101 2900 41E; effective date July 16, 2014; APPENDIX 2A).

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According to the FEMA map, the *subject property* lies well outside of any flood-prone areas (*Zone X - not shaded*, "areas determined to be outside the 0.2% annual chance floodplain").

The nearest mapped flood-prone areas are located nearly 8,000 feet northeast of the *project area*, near the confluence of Bacons Quarter Creek and Shockoe Creek (which flows south and discharges to the James River).

General limitation. The absence of a flood zone on a FEMA flood map does not ensure that inundation will not occur in a given area.

For example, some floodplains may be too small in area to have been accommodated by the mapping program. Alternatively, an area lying outside a stream channel may become inundated by sheet flow, even though the associated stream has *not* attained flood stage.

## 2A.8 Air Quality

The City of Richmond is currently included within the Richmond Ozone Non-Attainment Area (as defined by the Clean Air Act) (APPENDIX 2A). Measures to restrict emissions of volatile organic compounds (VOCs) and oxides of nitrogen (NOx) are required, especially during ozone alert days.

# 2A.9 Adjacent Properties

Land uses in areas immediately adjacent to the *project area* are summarized as follows:

southwest
Biotech 6
600 North Fifth Street (23219)

The Division of Consolidated Lab Services (DCLS) is under the Virginia Department of General Services.

westParking lot (gravel).

# northwestBiotech 7700 North Fourth Street

Biotech Seven is home to the headquarters office and data center for the *United Network for Organ Sharing* (UNOS), which is a non-profit, scientific and educational organization that administers the only Organ Procurement and Transplant Network in the United States.

#### northeast

East Duval Street, beyond which is located a small parking lot, paved with asphalt. Interstate I-95 / Interstate-64 is located just beyond the parking lot.

# southeastBiotech 8737 North Fifth Street

*True Health Diagnostics* is an innovative diagnostics company focused on preventing chronic disease in order to empower physicians and other medical specialists to achieve better patient health outcomes. They specialize in advanced clinical laboratory testing, which enables healthcare providers to more accurately diagnose, manage, and prevent the progression of cardiovascular diseases, genetic disorders, diabetes, and other metabolic conditions.

# southBiotech 9601 East Jackson Street

Biotech Nine is home to the *Altria Center for Research and Technology*. The Center is designed to promote collaboration and creativity and to develop technologies that improve Altria Group's operating companies' current products and lead to innovative new products.

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# 2B AFFECTED ENVIRONMENT ECOLOGICAL CHARACTERISTICS

The preceding SECTION provided information concerning natural physical characteristics of the *study area* and the *project area*. The subject SECTION provides information about the flora (including agricultural and silvicultural aspects) and fauna in the *study area* and the *project area*. Supporting documentation is provided in APPENDIX 2B.

#### 2B.1 Flora

Flora is essentially limited to small trees along the sidewalks that follow the perimeter of the block, in which the *project area* is located. In general, vegetation in the *project area* appears to be typical of that encountered in urban landscapes.

#### 2B.2 Fauna

The habitat in the *project area* is *not* expected to be conducive to wildlife, other than the most transient visitors (insects, birds).

DAA obtained information concerning threatened and endangered species from the Virginia Department of Game and Inland Fisheries (DGIF), Forest and Wildlife Information Service (FWIS). Information extracted from the database indicates that several *species of potential concern* are believed to occur within *three miles* of the *project area* (APPENDIX 2B).

By "species of potential concern" we mean species placed in one or more of the following categories:

- federal endangered
- federal threatened
- state endangered
- state threatened
- federal proposed
- federal candidate
- federal species of concern
- collection concern

Three of the listed species of potential concern are aquatic bivalve mollusks. Since aquatic environments are not present in, or adjacent to, the proposed project area, further consideration of these species is not warranted:

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- James spinymussel
- dwarf wedgemussel
- Atlantic pigtoe

*Three* of the listed species of potential concern are *fish*. Since aquatic environments are *not* present in, or adjacent to, the proposed *project area*, further consideration of these species is not warranted:

- Atlantic sturgeon
- Alewife herring
- blueback herring

*One* of the listed species of potential concern is an *aquatic reptile*. Since aquatic environments are *not* present in, or adjacent to, the proposed *project area*, further consideration of these species is not warranted:

spotted turtle

*Four* of the listed species of potential concern are *bats*:

# northern long-eared bat

According to records obtained from DGIF, the Northern long-eared bat inhabits forested regions, and will forage mainly on hillsides, and ridge forests rather than riparian and flood-plain forests. They frequent areas under the forest canopy just above shrub level.

Based upon their preferred habitat, the probability of finding the referenced species in, or immediately adjacent to, the proposed *project area* (other than as a transient visitor) is deemed unlikely.

#### Rafinesque's eastern big-eared bat

According to records obtained from DGIF, the eastern big-eared bat is incidental in Virginia because it has adapted to temperate, arboreal zones found only in the extreme southeast. The Dismal Swamp specimen was found in a hollow cypress snag. Elsewhere they use the space under loose tree bark or buildings. They prefer roosting sites near mature forests and adjacent to rivers and other permanent bodies of water.

Based upon their preferred habitat, the probability of finding the referenced species in, or immediately adjacent to, the proposed *project area* is deemed unlikely.

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#### tri-colored bat

DGIF records do not contain information concerning the specific habitat of this species, beyond the fact that their preferred natural vegetation is forest.

Based upon their preferred habitat, the probability of finding the referenced species in, or immediately adjacent to, the proposed *project area* (other than as a transient visitor) is deemed unlikely.

#### little brown bat

According to records obtained from DGIF, the species is found in all forested regions of Virginia, and will roost in caves, buildings, rocks, trees, under bridges, in mines and tunnels.

Whereas DGIF lists the species as "State Endangered," the habitat information provided by DGIF states, "This is one of the most abundant insectivorous bats in Virginia."

Based upon their preferred habitat, the probability of finding the referenced species in, or immediately adjacent to, the proposed *project area* (other than as a transient visitor) is deemed unlikely.

*Five* of the listed species of potential concern are *birds*:

#### • *peregrine falcon* [photograph, APPENDIX 2B]

Peregrine falcons are known to be living in the downtown area of Richmond, where they prey on pigeons, yellow-billed cuckoos, and other urban "wildlife."

According to the Richmond Audubon Society (*richmondaudubon.org*), the presence of these birds has been attributed to a falcon restoration project, sponsored by Dominion Virginia Power, and including a number of partners (the Center for Conservation Biology at the College of William and Mary, Virginia Department of Game and Inland Fisheries).

According to the Virginia Department of Game and Inland Fisheries, falcons have been nesting in certain high-rise buildings in the downtown area.

Given the distance between the *project area* and the nearest downtown buildings at which peregrine falcons have been observed, the probability that the proposed *project area* would adversely affect peregrine falcons is deemed unlikely.

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# ■ bald eagle

According to *The Center For Conservation Biology*, the nearest bald eagle nest is located several miles west of the *project area*, on an island in the middle of the James River (*www.ccbbirds.org/maps/#eagles*; May 12, 2015).

Based upon their preferred habitat, the probability of finding the referenced species in, or immediately adjacent to, the proposed *project area* is deemed extremely unlikely.

## upland sandpiper

According to records obtained from DGIF, the upland sandpiper breeds in open pastures or grassy fields, often in hayfields of alfalfa or clover, and occasionally in a forest clearing. Hayfields and old pastures are favored nesting habitat. Needs extensive grass areas (10-15 acres) with grasses being 1-3 feet high.

Based upon their preferred habitat, the probability of finding the referenced species in, or immediately adjacent to, the proposed *project area* is deemed extremely unlikely.

# loggerhead shrike

#### migrant loggerhead shrike

According to records obtained from DGIF, this species prefers areas of grassland that are grazed or mowed occasionally to keep the grass short. An abundance of perching sites, such as fences, woody vegetation or hedgerows is also important. This species usually nests in eastern redcedar or hawthorne.

Based upon their preferred habitat, the probability of finding the referenced species in, or immediately adjacent to, the proposed *project area* is deemed extremely unlikely.

#### 2B.3 Wetlands

DAA reviewed the National Wetlands Inventory (NWI) map of the *study area*, as prepared by the United States Department of the Interior (Fish and Wildlife Service). NWI maps are based upon aerial photography superimposed on USGS 7.5-minute topographic quadrangles.

A review of the National Wetlands Inventory map indicates that wetlands are *not* present in the *project area*, or on adjacent properties (APPENDIX 2B).

DAA also reviewed soils maps of the *study area* published by the United States Department of Agriculture, Soil Conservation Service (APPENDIX 2B).

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The *project area* is mapped as being underlain by "*Udorthents-dumps complex, pits*" (map unit 40) (northern half of project area) and *Urban land*" (map unit 41) (southern half of project area).

Both soils are assigned a hydric rating of "0" (not hydric). The hydric rating is consistent with the National Wetlands Inventory map.

In addition, during a visit to the *study area*, DAA did *not* observe any evidence of wetlands within, or immediately adjacent to, the *project area*.

General limitation. The absence of mapped wetlands on a National Wetlands Inventory map does not ensure that jurisdictional wetlands are not physically present. In many cases, the scale of the available data simply precluded the ability to discern and map smaller wetlands. In our experience, the wetlands boundary, as mapped on the ground, often extends beyond the limit of wetlands as shown on the National Wetlands Inventory map.

# 2B.4 Chesapeake Bay Preservation Areas

The *project area* is *not* located in a Resource Management Area or a Resource Protection Area, as defined by the Chesapeake Bay Preservation Act.

The nearest Chesapeake Bay Preservation Areas are located several thousand feet to the northeast of the project area, in connection with Bacons Quarter Branch and Shockoe Creek (FIGURE E1, APPENDIX 2B). More extensive Chesapeake Bay Preservation Areas are located along the James River, a considerable distance to the south of the *project area*.

Given the nature of the project, relatively small area involved in the project, and the distance between the project and the James River, we find *no evidence* to suggest that the proposed project would adversely impact Chesapeake Bay Preservation Areas.

## 2B.5 Virginia Coastal Resources Management Area

The *proposed project* is located in an area subject to the Virginia Coastal Resources Management Program. Given the nature of the project, relatively small area involved in the project, and the distance between the project and the James River, we find *no evidence* to suggest that the proposed project would adversely impact the Virginia Coastal Resources Management Area.

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#### 2B.6 Scenic Rivers

A review of the list of federally designated "Wild and Scenic Rivers" indicated that no rivers in Virginia are so designated. The nearest federally designated Wild and Scenic River is the *Bluestone River* in West Virginia (APPENDIX 2B).

The intent of the *Virginia Scenic Rivers Program* is to identify, designate and help protect rivers and streams that possess outstanding scenic, recreational, historic and natural characteristics of statewide significance for future generations. The program is managed by the Commonwealth and is not to be confused with the federal Department of the Interior's Wild and Scenic Rivers Program.

Scenic river designations result from initiatives from partnerships of local groups, local governments, state agencies and the Virginia General Assembly. In addition to existing designated state scenic rivers, other river segments have been deemed worthy of further study.

The nearest listed Virginia Scenic River is:

The James River, from the *west limits of Richmond to Orleans Street* (reach 53, map issued February, 2016; list issued May, 2015; APPENDIX 2B).

Given the nature of the project, relatively small area involved in the project, and the distance between the project and the James River, we find *no evidence* to suggest that the proposed project would adversely impact a *Virginia Scenic River*.

#### 2B.7 Natural Communities - Inventory and Assessment

DAA did *not* observe any natural communities in the *project area*, or on any adjacent properties. The *project area* is located in a fully developed urban setting.

# 2B.8 Agricultural Lands

DAA reviewed soils maps of the *study area* published by the United States Department of Agriculture, Soil Conservation Service (APPENDIX 2B).

The *project area* is mapped as being underlain by "*Udorthents-dumps complex, pits*" (map unit 40) (northern half of project area) and *Urban land*" (map unit 41) (southern half of project area). With respect to farmland classification, both soils are rated as "*not prime farmland*."

In addition, during a visit to the *study area*, DAA did *not* observe any agricultural lands, or forested land, in the *project area*, or on any adjacent properties.

The *project area* is located in a fully developed urban setting, which was removed from agricultural and silvicultural use many decades ago, and is unlikely to ever be returned to agricultural or silvicultural use.

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# 2C PROJECT IDENTIFICATION AND DESCRIPTION: HISTORICAL USE

The preceding SECTION provided information concerning natural (ecological) characteristics of the *study area* and the *project area*. The subject SECTION provides information about the prior use of the *study area* and the *project area*, with a focus on historic cultural resources. Supporting documentation is provided in APPENDIX 2C.

Areas of "potential effects" on historic cultural resources (direct and indirect) are shown on FIGURE H1 (APPENDIX 2C).

#### 2C.1 Historic Districts

DAA visited the Virginia Department of Historic Resources (DHR; Kensington Avenue, Richmond) to review *historic districts*.

Based upon a review of publicly available resources at the DHR, we find that the *project area* is located within the Jackson Ward Historic District.

More specifically, the *project area* lies within the northeastern corner of the Jackson Ward Historic District. The Jackson Ward Historic District was listed in the National Register of Historic Places during 1976 and designated as a National Historic Landmark during 1978.

The boundaries and/or contributing elements of the District have been modified on three occasions, subsequent to its initial nomination during 1976. All four nomination forms are provided in (APPENDIX 2C).

# 2C.2 Historic Structures (DHR)

DAA visited the Virginia Department of Historic Resources (DHR; Kensington Avenue, Richmond) to review specific *historic structures*.

As noted above, the *project area* appears to lie within the northeastern corner of the Jackson Ward Historic District. No historic structures are located in the project area. Surveyed structures within the *area of potential indirect effects* (*APE indirect*; FIGURE H1, APPENDIX 2C), beginning at the *project area* and proceeding geographically in a clockwise direction, are documented in APPENDIX 2C and described briefly below.

Single Dwelling (DHR resource 127-0237-0762) is mapped as being located at 740 North Fifth Street, directly within the *project area*.

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According to DHR records, the structure at this location was built during 1910 and was a two-story residential structure. The historical significance of the property to the historical district is *not* stated (*not* listed as either contributing or non-contributing).

During a visit to the *project area*, and nearby properties, DAA determined that the surveyed resource has been demolished and replaced by a large, modern research facility (Department of Forensic Science, 700 North Fifth Street).

Office Building (DHR resource 127-0237-0761) is mapped as being located at 737 North Fifth Street, directly east across North Fifth Street from the *project area*.

According to DHR records, the structure at this location was built during 1990 and was a three-story office building. The historical significance of the property to the historical district is *not* stated (*not* listed as either contributing or non-contributing).

During a visit to the *project area*, and nearby properties, DAA determined that the surveyed resource has been demolished and replaced by a large, modern research facility ("BioTech Eight").

Fifth Street Baptist Church (DHR resource 127-0347) was located at 705 North Fifth Street, which was directly southeast across North Fifth Street from the *project area*.

According to DHR records, this structure was *demolished* prior to 1984. During a visit to the *project area*, and nearby properties, DAA determined that the site is currently the location of a large, modern research facility ("*Biotech Five*").

*House* (DHR resource 127-5426) is mapped as being located at 600 North Fifth Street, directly south across East Jackson Street from the *project area*.

During a visit to the *project area*, and nearby properties, DAA determined that the surveyed resource has been demolished and replaced by a large, modern research facility ("BioTech Nine").

Third Street Bethel African Methodist Episcopal Church (DHR resource 127-0274 or 127-0237-0698) is located at 614/616 North Third Street, which is approximately one block west of the project area.

The *project area* is visible from the north end of the church.

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This structure is a contributing resource in the Jackson Ward Historic District and is listed on the National Register of Historic Places (1975) and the Virginia Landmarks Register (1975).

Saint Joseph Memorial (DHR resource 127-6237 or 127-0237-0893) is mapped as being located at 713 North First Street, which is approximately three blocks northwest of the *project area*.

The *project area* is *not* visible from the Memorial, as the view is blocked by Biotech 7 (UNOS).

The Memorial was installed circa 1995, and is listed as a contributing resource in the Jackson Ward Historic District. The historical marker memorializes the former site of St. Joseph's Catholic Church, founded during 1885 in Jackson Ward. The memorial area includes a small park.

## 2C.3 Archaeological Resources (DHR)

DAA visited the Virginia Department of Historic Resources (DHR; Kensington Avenue, Richmond) to review *archeological resources*.

Based upon a review of publicly available resources at the DHR, we find *no indication* that any *surveyed archaeological resources* are located in the *project area*.

The nearest surveyed archeological resource (DHR resource 44HE0962) is shown to be located three blocks east of the *project area*, along the 700-block of North Seventh Street.

The existing facility covers the entire block. Because of the highly disturbed nature of the *project area*, the probability that intact archeological resources are present within the *project area* is deemed relatively low.

As discussed above, during 2016, DAA conducted a geotechnical study of the northeastern half of the project area (in the existing parking lot). Fifteen geotechnical borings were advanced in the project area, using hollow-stem augers with split-spoon samplers. Boring depths ranged from 25 feet below ground surface to 110 feet below ground surface (APPENDIX 2A).

Fill material was encountered in all borings, ranging in thickness from approximately 2 feet to approximately 33 feet, with a median thickness of 6 feet.

Because of the possibility of encountering buried cultural historic resources, geotechnical personnel were asked to pay particular attention to the presence of man-made materials in the subsurface. The distribution of man-made materials observed among the 15 borings is summarized on the TABLE presented in APPENDIX 2C.

Historic cultural materials (mostly brick debris) were observed in 7 of the 15 borings. Cultural materials observed within the 0-6 foot interval of fill are most likely related to the regrading of the project area subsequent to demolition of all historic residential structures within the block, and prior to development of the existing facility. For example, material observed in boring B-10, between 0 feet and 5.5 feet, is described as "construction debris (brick, roof slate, concrete)". Given the presence of roof slate (as derived from historic residential structures), these materials might more accurately be described as "demolition debris", rather than "construction debris" (as derived from construction of the structures that currently occupy the project area).

None of the borings encountered "auger refusal" either within, or at the base of, the fill material, suggesting that (1) all of the man-made materials encountered represent demolition debris and that (2) none of the borings encountered intact residential building foundations.

Anomalously thick sections of fill material were observed in some borings, particularly in B-05 (33 feet) and B-15 (25 feet). Since the project area was almost completely developed by 1877 (FIGURE H2, APPENDIX 2C) (with the last lot having been developed by 1925; Sanborn map, APPENDIX 2C), we surmise that most of the fill material encountered below a depth of about 6 feet below grade was used to fill topographically lower areas in order to facilitate the construction of houses within the project area during the late 1800s.

We further note that *groundwater* was encountered within apparent fill material in boring B-05 and B-15, which suggests that those particular topographically lower areas represent former *drainages* (*swales*) that were filled in order to construct houses within the project area during the late 1800s.

Most of the cultural materials encountered in fill material consist of brick fragments; however, fragments of *coal* and one small (1.1 inches in length) fragment of *glazed ceramic pottery* (photographs, APPENDIX 2C) was recovered from a split-spoon sample (28-30 feet) within fill material (0-33 feet) in boring B-05. The presence of these materials within a split-spoon sampler, above the base of the fill, indicates that these materials are entrained in the fill material, and do *not* represent intact artifacts from whatever may have been present in that area *prior to* filling the swale.

Based upon the results of research and observations made during drilling, we find no evidence that significant archaeological resources remain in the project area. Nonetheless, in the event that archeological artifacts are discovered during demolition and/or construction, DFS shall notify DHR.

## 2C.4 Historical Photographs

VCU Libraries, in cooperation with the City of Richmond, has compiled a collection of photographs documenting the historic Jackson Ward neighborhood. John Zehmer took the photographs, as part of a City of Richmond project. The images were published in 1978 (*The Jackson Ward Historic District*), with text by Robert P. Winthrop (Virginia architect and specialist in the architectural history of Richmond).

The collection includes photographs of several houses - since demolished - that were located along the northwest side of the 700-block of North Seventh Street (that is, along the southeast side of the project area). Photographs of five houses are presented in APPENDIX 2C:

- 710 North Fifth Street. Federal / Greek Revival.
- 714 North Fifth Street. Oueen Anne.
- 716 North Fifth Street. Queen Anne.
- 728 North Fifth Street. Italianate.
- 738 North Fifth Street. Queen Anne Eastlake.

The collection contains photographs of houses located along the northwest side of the 700-block of North Fourth Street (700 North Fourth Street through 722 North Fourth Street), but does not contain any photographs of houses located along the southeast side of the 700-block of North Fourth Street (which would have had odd-numbered addresses).

As noted below (Historic Maps), the re-routing of North Fourth Street, in connection with the construction of on-ramps leading to Interstate I-95, would have resulted in the destruction of at least fourteen, and perhaps has many as twenty, houses along the southeast side of North Fourth Street. The absence of any photographic representation of houses along the southeast side of the 700-block of North Fourth Street suggests that *all* of those houses may have been demolished by the time Mr. Zehmer was photographing the structures that remained in the area.

## 2C.5 Historic Maps

DAA reviewed a portion of the map of Richmond published by F. W. Beers during 1877 (FIGURE H2, APPENDIX 2C).

By 1877, most of the block in which the project area is located had been developed for residential purposes. At that time, approximately thirty homes were located in the block (some having outbuildings). Names of owners / residents are posted on a many of the lots.

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Two standard lots, and one unusually large lot (labeled "A. Nott"), remained vacant along the northwest side of North Fifth Street.

The nearest public facilities were:

- "Navy Hill School" (one block east of the project area, along the south side of Duval Street).
  - According to the historical marker, the Navy Hill neighborhood was named as a tribute to the naval victories during the War of 1812. The area was initially settled by German immigrants during 1810. By the end of the 1800s, the neighborhood had transitioned to a "vibrant African American community".
- "German Lutheran Church" (immediately east of the project area, along the north side of Jackson Street not a through street at the time. VDHR resource 127-0347).
- "St. Paul's Church Home" (one block southeast of the project area, along the east side of North Fifth Street and the north side of Leigh Street).

All of these public facilities have been demolished.

The re-routing of North Fourth Street, in connection with the construction of on-ramps leading to Interstate I-95, would have resulted in the destruction of at least fourteen, and perhaps has many as twenty, houses along the southeast side of North Fourth Street.

## 2C.6 Historical Topographic Maps

The term "USGS topographic maps" refers to maps available from, and generally produced by, the United States Geological Survey.

The project area is wholly located on the Richmond, Virginia, USGS 7.5-minute quadrangle.

Draper Aden Associates reviewed a series of topographic maps prepared by the United States Geological Survey (APPENDIX 2C), as provided by Environmental Data Resources (APPENDIX 2C). Salient features, as observed on selected maps, are described below.

By 1894, all of the streets associated with the project area and its environs had been developed. Since individual buildings are not indicated, however, it is not possible to determine the extent to which these areas had been developed.

*Cross-reference*. Review of a historic map (Beers, 1877) indicates that houses had already been constructed in the project area by 1877.

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By 1968, North Third Street had been re-routed to accommodate ramps associated with Interstate I-95. The road cut across the north end of the 300-block of North Third Street to connect with North Fourth Street, which was itself re-routed to accommodate the change. These changes resulted in the destruction of several houses that had been located along the southeast side of the 700-block of North Fourth Street.

## 2C.7 Historical Aerial Photographs

Draper Aden personnel reviewed historical aerial photographs produced by various public agencies, as provided by Environmental Data Resources (APPENDIX 2C). Salient features, as observed on selected photographs, are described below.

#### • 1937

Houses, and associated outbuildings, can be discerned throughout the project area.

#### 1959

By 1959, the Richmond-Petersburg Turnpike (Interstate I-95) had been constructed along the northeast side of the project area. A bridge had been constructed across the highway on North Fifth Street.

## 1968

By 1968, Interstate I-64 had been constructed. In connection with that enterprise, North Third Street had been re-routed to accommodate ramps associated with Interstate I-95 / Interstate I-64. The road cut across the north end of the 300-block of North Third Street to connect with North Fourth Street, which was itself rerouted to accommodate the change. The North Fifth Street bridge provided access to Interstate I-64 (east bound).

The re-routing of North Third Street and North Fourth Street resulted in the destruction of several houses that had been located along both the northwest and southeast sides of the 700-block of North Fourth Street. Conversely, most of the houses that were historically located along the northwest side of North Fifth Street appear to have remained intact.

By 1968, East Jackson Street had been extended to the east, beyond North Fifth Street.

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## • 1981

By 1981, all but possibly six houses along the northwest side of the 700-block of North Fifth Street had been demolished.

### 1984

By 1984, the northeastern half of the project area was being used as a vehicle parking lot. Several houses appear to have remained along the northwest side of the 700-block of North Fifth Street; however, individual houses cannot be discerned.

#### 1994

By 1994, all of the houses that were historically located in the project area had been demolished. Three, or four, small structures can be discerned in the project area.

#### • 2000

By 2000, a large building had been constructed in the southwestern half of the project area. The northeastern half of the project area was being used an automobile parking lot.

## 2C.8 Fire Insurance Maps

Private fire insurance map companies produce fire insurance maps. Such maps reveal the evolution of the manner in which properties were used. The Sanborn Company produced such maps for urban areas for many years.

DAA reviewed selected Sanborn maps, as provided by Environmental Data Resources.

■ **1905**. As noted above (Historic Maps), by 1877, most of the block in which the project area is located, had been developed for residential purposes. Two standard lots, and one unusually large lot (labeled "A. Nott"), remained vacant along the northwest side of North Fifth Street.

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By 1905, two standard-size lots within the "A. Nott" parcel had been developed, but a portion of the relatively large "Nott lot" remained undeveloped.

Development within the block appears to have been almost exclusively single – family homes (labeled "D") (three of which had stables).

A store (labeled "S") was located at 701 North Fourth Street (west corner of the project area).

*Cross-reference*. Historical city directories indicate that a grocery store was located at 701 North Fourth Street from before 1930 until after 1963.

Several public buildings were located on adjacent blocks:

• Engine Company No. 9. 801 North Fifth Street (northeast corner North Fourth Street x East Duval Street).

Cross-reference. VDHR Historical Marker SA 54 / Engine Company No. 9 Fire Station is located near the northeast corner of the project area.

According to the historical marker, the first professional African American firefighters in Virginia were hired on July 1, 1950, and were stationed at the Engine Company No. 9 Fire Station on the northeast corner of the intersection (that is, across the street from the project area).

The City of Richmond integrated the fire department on July 6, 1963, and demolished the old fire station during 1968.

· *Navy Hill School*. 738 North Sixth Street (southwest corner North Sixth Street x East Duvall Street).

*Cross-reference. VDHR Historical Marker SA 85 / Navy Hill* is located along Leigh Street, along the southwest side of the project area.

- · Fifth Street Baptist Church. 701 North Fifth Street. At that time, East Jackson Street terminated at North Fifth Street.
- **1925**. An alley (labelled "Acme Alley") bisected the block on a northeast-southwest direction.

By 1925, houses had been constructed on the previously (1905) undeveloped portion of the "Nott lot."

Development within the block appears to have been almost exclusively single – family homes (labeled "D").

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By 1925, the *three* stables, located along Acme Alley, had been converted to automobile garages (labeled "A").

A store (labeled "S") was still located at 701 North Fourth Street (west corner of the project area).

By 1925, the house located at 711 North Fourth Street had been converted to apartments (labeled "F").

**1952**. By 1952, *seven* automobile garages (labeled "A") were located along either side of Acme Alley.

A store (labeled "S") was still located at 701 north Fourth Street (west corner of the project area).

The house located at 711 North Fourth Street was still being used as apartments (labeled "F").

By 1952, the former private garage located at 410 East Jackson Street was being used as an *automobile repair facility* (labeled "Auto Rep").

*Cross-reference.* Historical city directories indicate that "*Grants Auto Repair*" was located at 410 East Jackson Street during 1955.

Comment. Historical city directories indicate that "Oscar Miller auto repair" was located at 729 North Fourth Street from before 1955 until after 1960. The 1952 Sanborn map indicates that a single family home was located at that address, with a private automobile garage at the back of the lot (facing Acme Alley). These sources, considered collectively, suggest that Mr. Miller was operating the automobile repair business from the garage at the back of his property.

■ **1969**. By 1969, every house that had historically faced the southeast side of the 700-block of North Fourth Street had been demolished. Two single-family houses remained at the back of two lots, facing the alley.

Twelve houses remained along the northwest side of the 700-block of North Fourth Street (across North Fourth Street from the project area). At least some of those houses were photographically documented by John Zehmer prior to 1978.

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Conversely, eighteen residential structures remained along the northwest side of the 700-block of North Fifth Street (in other words, along the southeast side of the project area), apparently unaffected by the construction of Interstate I-95.

By 1969, the house located at 736 North Fifth Street was being used as a restaurant (labeled "R").

By 1969, the automobile repair facility located at 410 East Jackson Street had been demolished.

With regard to the several public buildings that were historically located on adjacent blocks:

- Engine Company No. 9. By 1969, the historic fire station had been demolished to make way for an on-ramp associated with Interstate I-95.
- · *Navy Hill School*. By 1969, the historic school had been demolished to make way for the same on-ramp associated with Interstate I-95.
- · Fifth Street Baptist Church. The church remained intact. By 1969, East Jackson Street had been extended to the east, and ran along the southwest side of the church.
- 1978. By 1978, the last two houses that were historically located on the northwestern half of the block on which the project area is located, had been demolished.

By 1978, only *nine* houses (700, 702, 704, 706, 710, 714, 716, 728, 738,) and *one* apartment building (740 North Fifth Street, labeled "*Apts*") remained along the northwest side of the 700-block of North Fifth Street (in other words, along the southeast side of the project area).

*Cross-reference*. As discussed above, John Zehmer photographed several of those houses, either during or prior to 1978:

- · 710 North Fifth Street. Federal / Greek Revival.
- · 714 North Fifth Street. Queen Anne.
- · 716 North Fifth Street. Queen Anne.
- · 728 North Fifth Street. Italianate.
- · 738 North Fifth Street. Queen Anne Eastlake.

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■ **1979**. By 1979, the original alignment of the 700-block North Fourth Street had been abandoned, as North Fourth Street was re-routed to improve access to Interstate I-95.

Twelve houses remained along the northwest side of the 700-block of North Fourth Street (across North Fourth Street from the project area. As noted above, at least some of those houses were photographically documented by John Zehmer, either during or prior to 1978.

The house located at 740 North Fifth Street (labeled "Apts") was still being used as apartments.

■ **1984**. By 1984, only *seven* houses (700, 702, 704, 706, 710, 714, 716) and *one* apartment building (740 North Fifth Street, labeled "*Apts*") along the northwest side of the 700-block of North Fifth Street (in other words, along the southeast side of the project area).

### 2C.9 Local Street Directories

The term "local street directories" refers to directories published by private (or sometimes government) sources and showing ownership and/or uses of sites by reference to physical street addresses. The term does not refer to the more familiar directories that list telephone numbers sorted by names of individuals or businesses.

Historical *local street directories* often provide the names of businesses (if any) that were previously located at (or near) the subject property. In some cases, the nature of the business may be assumed from the name of the business, which may permit inferences to be made regarding the potential for environmental incidents at the property.

Draper Aden personnel reviewed information derived from historical street directories, published between 1920 and 2013 (inclusive), pertaining to addresses along North Fourth Street, North Fifth Street, and East Jackson Street, as provided by Environmental Data Resources (APPENDIX 2C):

Information derived from a review of historical street directories is summarized as follows:

The 700-block of the southeast side of North Fourth Street (project area) was almost wholly residential from before 1920 until after 1963. By 1968, all of those buildings appear to have been demolished.

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A grocery store was located at 701 North Fourth Street from before 1930 until after 1963.

A beauty shop (Bessie's Beauty Shop) was located in a residence at 709 North Fourth Street from before 1940 until after 1963.

An automobile repair facility (Oscar R Miller) was located in a residence at 729 North Fourth Street from before 1955 until after 1960. Mr. Miller had lived at that location since before 1946.

The 700-block of the northwest side of North Fifth Street (project area) was almost wholly residential from before 1920 until after 1968. By 1973, all but seven of those buildings appear to have been demolished. By 2003, the last of the remaining buildings appears to have been demolished.

The Virginia Department of Forensic Science (along with the Office of the Chief Medical Examiner of Virginia, which collectively occupy the entire block) has been located at 700 North Fifth Street since before 2008.

A commercial automobile park lot (Virginia Park) was located at 706 + 708 North Fifth Street from before 1987 until after 1991.

A barber shop (Community Barber Shop) was located in a residence at 734 North Fourth Street from before 1946 until after 1946.

An apartment building (Wilmar Apartments) was at 740 North Fifth Street from before 1963 until after 1978.

The 400-block of the northwest side of North Fifth Street (project area) was almost wholly residential from before 1920 until after 1968. By 1973, all but seven of those buildings appear to have been demolished. By 2003, the last of the remaining buildings appears to have been demolished.

The Office of the Chief Medical Examiner of Virginia (along with The Virginia Department of Forensic Science, which collectively occupy the entire block), has been located at 400 East Jackson Street since before 2003.

An automobile repair facility (Grant's Auto Repairs) was located in a former private automobile garage at 410 North Fourth Street from before 1951 until after 1955.

Comment. The directory indicates that the automobile repair facility was located at 400 East Jackson Street during 1951; however, a comparison with historical fire insurance maps suggests that the facility was always physically located at 410 East Jackson Street.

## 2C.10 Other Cultural Features

DAA did not identify any other significant cultural features beyond those described above.

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# 2D PROJECT IDENTIFICATION AND DESCRIPTION: INFRASTRUCTURE

The preceding SECTION provided information concerning historical use of the *study area* (in general) and the *project area* (in particular), with a focus on historic cultural resources. The subject SECTION provides information about the existing infrastructure (improvements, utilities, plans) in the *study area* (in general) and the *project area* (in particular). Supporting documentation is provided in APPENDIX 2D.

## 2D.1 Operation

The proposed project is operated by the *Virginia Department of Forensic Science* (DFS) and the *Office of the Chief Medical Examiner* (OCME). Testing in the areas of controlled substances, firearms, tool marks, forensic biology, forensic toxicology, latent prints, questioned documents and trace evidence, are carried out in the Central Forensic Laboratory of DFS. The Laboratory also houses a training section which certifies breath alcohol instruments and trains operators in their use, and also trains law enforcement personnel in crime scene processing and evidence handling.

#### 2D.2 Roads

The project will *not* alter existing patterns of traffic flow.

Short-term lane closures are anticipated, in order to off-load construction equipment and materials (for example). DFS and OCME are cognizant, however, of the fact that East Jackson Street and North Fourth Street are significant east-west arterials, and will avoid lane closures along East Jackson Street and North Fourth Street (to the extent deemed practicable).

## 2D.3 Electric Power

Virginia Power provides electric power to the *project area*. Large transformers were noted outside of the building, within a walled enclosure. Access to the transformers is gained via a locked steel gate.

### 2D.4 Telecommunications

Underground telecommunication lines are located in the *project area*.

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2D.5 Potable Water

The City of Richmond provides potable water to the *project area*.

DAA did *not* observe any water supply wells within the *project area*, and none are believed to be located in the vicinity of the *project area*.

2D.6 Wastewater

The City of Richmond provides waste water treatment services to the *project area*.

2D.7 Stormwater

The City of Richmond provides stormwater conveyance services to the *project area*. A combined sanitary sewer / stormwater sewer system provides stormwater conveyance and sanitary sewerage for the *project area*.

2D.8 Structural Improvements

A large, spatially complex building occupies the southwest half of the property. A parking lot, paved with asphalt, occupies the northeastern half of the property.

2D.9 Petroleum Storage Tanks

During a visit to the *project area*, DAA did *not* observe any evidence of either above-ground or underground petroleum storage tanks.

One or more emergency generators, having integrated fuel tanks, are assumed to be present inside the existing building.

2D.10 Heat Source

During a visit to the *project area*, DAA observed a large *natural gas* meter at the back (northeast side) of the building, and inferred that the building is heated using natural gas.

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Based upon the available information, the presence of an underground heating oil tank in the *project* area does *not* appear likely.

#### 2D.11 Local Ordinances

The Commonwealth, as a higher governmental jurisdiction, is *not* subject to local zoning laws; therefore, the proposed project shall *not* be subject to City of Richmond zoning regulations.

The *project area* is *not* located in a Resource Management Area or Resource Protection Area, as defined by the Chesapeake Bay Preservation Act.

## 2D.12 Regional Plans

In conjunction with the development of a master plan for the downtown area of the City of Richmond, HPE conducted a study of transportation. Results of the study, with recommendations, are presented in "*Transportation Report for Downtown Richmond (Richmond, Virginia)*" (dated October 31, 2007; APPENDIX 2D).

As noted in the report (page 3), "... past conventional zoning and engineering standards, particularly those related to traffic engineering, tends to be focused on minimizing automobile delay, and not the creation of an environment attractive to and safe for pedestrians. These are not mutually exclusive goals, but the lack of pedestrian emphasis allows motor vehicles issues to further prevail." The report goes on to suggest adoptions of various "walkable throroughfare" designs, which retain permeability for vehicular traffic.

DFS/OCME is cognizant of the suggestions presented in the transportation report; however, the *proposed project* will *not* alter existing patterns of traffic flow (discussed above).

## 2E AFFECTED ENVIRONMENT: REGULATED / HAZARDOUS SUBSTANCES

The preceding SECTION provided information about the existing infrastructure (improvements, utilities, plans) in the *study area* (in general) and the *project area* (in particular). The subject SECTION provides information concerning the presence or potential, or actual, presence of "*regulated substances*," or otherwise "*hazardous materials*," in the *study area* (in general) and the *project area* (in particular). Supporting documentation is provided in APPENDIX 2E.

For the purposes of this study, the term "regulated substance" means an element, compound, mixture, solution, or substance that, when released into the environment, may present substantial danger to the public health or welfare, or the environment. The term "regulated substance" here includes and is limited to:

- any substance defined in Section 101(14) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980
- any substance regulated as a hazardous waste under subtitle C of the Resource Conservation and Recovery Act (RCRA) of 1976
- petroleum, including crude oil or any fraction thereof, that is liquid at standard conditions of temperature and pressure (60 degrees Fahrenheit and 14.7 pounds per square inch absolute)

The term "petroleum" includes petroleum and petroleum-based substances comprised of a complex blend of hydrocarbons derived from crude oil through processes of separation, conversion, upgrading, and finishing (such as motor fuels, jet fuels, distillate fuel oils, residual fuel oils, lubricants, petroleum solvents, used oils).

As defined, the term "regulated substance" does not include asbestos-containing materials or lead-based coatings (unless construction and demolition debris materials containing such coatings have been tested and determined to represent a hazardous waste).

In addition to "regulated substances" (sensu CERCLA), other materials (such as asbestos and lead-based paint) are considered to represent "otherwise hazardous materials."

## 2E.1 Publically Available Environmental Records

DAA reviewed information extracted from a variety of State and Federal databases containing information pertaining to environmental incidents in the *study area*, as provided by Environmental Data Resources. Results of the database searches are summarized below and documented in greater detail in APPENDIX 2E.

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With respect to potential *on-site sources* of contamination, the database searches reveal several environmental conditions within, or immediately adjacent to, the project area:

• Virginia Division of Forensic Science Central Laboratory 700 North Fifth Street

The database indicates that the facility is a *Conditionally Exempt Small Quantity Generator* of hazardous waste (generates not more than 100 kg of hazardous waste during any calendar month). *No permit violations* are shown to have been reported.

We find no reason to suspect that the management of small quantities of hazardous waste at the existing facility will adversely affect the health and safety of those working on the proposed project.

Richmond Biotech LLC / Health Diagnostic Lab, Inc.
 737 North Fifth Street

The referenced facility is located directly across North Fifth Street from the project area.

The database indicates that the facility is a *Small Quantity Generator* of hazardous waste (generates more than 100 but less than 1000 kg of hazardous waste during any calendar month). *No permit violations* are shown to have been reported. For that reason, the adjacent facility does *not* appear to warrant further consideration, in the context of this condition.

• Oscar R Miller [automotive repair] 729 North Fourth Street

The historical *automotive repair facility*, which no longer exists, was located along the west side of the project area (east side of North Fourth Street). The facility may or may not have sold gasoline.

• S Grant [automotive repair] 410 East Jackson Street

The historical *automotive repair facility*, which no longer exists, was located along the south side of the project area (north side of East Jackson Street). The facility may or may not have sold gasoline.

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## Spencer Lee [clothing cleaners] 821 North Third Street

The historical clothes cleaning facility is *listed* as having been located along the east side of North Third Street, but is *mapped* as having been located along the east side of North Fourth Street, near the northwest corner of the project area.

The facility appears to have operated as *Spencer Steam Laundry* and *Spencer Hand Laundry* from before 1920 until after 1935. The facility may or may not have offered dry cleaning (solvent-based) services.

If the facility was actually located along the east side of North Fourth Street (as mapped), then the facility would have been replaced by North Fourth Street, when the street was re-routed to accommodate ramps associated with Interstate I-95. Construction of I-95 resulted in the elimination of east least half of the lots that had been located along the southeast side of historical North Fourth Street.

For that reason, the historical clothes cleaning facility does *not* appear to warrant further consideration, in the context of this condition.

## 2E.2 Historical Fire Insurance Maps

As noted above (Historic Resources), private fire insurance map companies produce fire insurance maps. Such maps reveal the evolution of the manner, in which properties were used. The Sanborn Company produced such maps for urban areas for many years.

DAA reviewed selected Sanborn maps, as provided by Environmental Data Resources. Relevant information derived from a review of historical Sanborn maps is summarized as follows:

- By 1952, a formerly private garage located at 410 East Jackson Street was being used as an *automobile repair facility* (labeled "*Auto Rep*").
- By 1969, the automobile repair facility located at 410 East Jackson Street had been demolished.

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## 2E.3 Historical Street Directories

As noted above (Historic Resources), Draper Aden personnel reviewed information derived from historical street directories, published between 1920 and 2013 (inclusive), pertaining to addresses along North Fourth Street, North Fifth Street, and East Jackson Street, as provided by Environmental Data Resources (APPENDIX 2C):

Relevant information derived from a review of historical street directories is summarized as follows:

- An *automobile repair facility* (Oscar R Miller) was located in a residence at 729 North Fourth Street from before 1955 until after 1960. Mr. Miller had lived at that location since before 1946.
- An *automobile repair facility* (Grant's Auto Repairs) was located in a former private automobile garage at 410 North Fourth Street from before 1951 until after 1955.

#### 2E.4 Discussion: Former Automobile Service Stations

A review of historical sources revealed that an *automobile repair facility* (Oscar R Miller) was located in a residence at 729 North Fourth Street from before 1955 until after 1960. Mr. Miller had lived at that location since before 1946.

The facility may or may not have sold gasoline. Regardless, any contaminated soils that may have been associated with the former automotive repair facility would have been excavated during construction of the existing building, and removed from the property. For that reason, the historical automotive repair facility does *not* appear to warrant further consideration, in the context of this condition.

A review of historical sources revealed that a formerly private garage located at 410 East Jackson Street was used as an automobile repair facility (Grant's Auto Repairs), from before 1951 until after 1955. By 1969, the automobile repair facility located at 410 East Jackson Street had been demolished.

The facility may or may not have sold gasoline. Regardless, any contaminated soils that may have been associated with the former automotive repair facility would have been excavated during construction of the existing building, and removed from the property. For that reason, the historical automotive repair facility does *not* appear to warrant further consideration, in the context of this condition.

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## 2E.5 Polychlorinated Biphenyls

Transformer oil may contain polychlorinated biphenyls (PCBs).

During a visit to the *project area*, DAA observed large electric power transformers within a walled service area at the north corner of the existing building.

Field personnel were unable to gain access to the service area, but did *not* observe evidence of leakage from any of the transformers, as viewed from the gated entry.

## 2E.6 Asbestos-Containing Building Materials

As noted above, as defined under CERCLA-RCRA, the term "regulated substance" does not include asbestos-containing building materials.

According to City of Richmond records, the existing building was constructed during 1998. Based upon the reported date of construction, the probability of encountering significant amounts of asbestos-containing building materials during the partial demolition of the existing building is deemed inconsequential. Accordingly, DGS does not intend to conduct any inspections for asbestos-containing building materials in connection with the proposed project. Conversely, according to SFCS personnel, they will place a note on demolition drawings indicating that an asbestos inspection will not be necessary.

#### 2E.7 Lead-Based Paint

As noted above, as defined under CERCLA-RCRA, the term "regulated substance" does not include lead-based coatings (unless construction and demolition debris materials containing such coatings have been tested and determined to represent a hazardous waste).

As noted above, according to City of Richmond records, the existing building was constructed during 1998. Based upon the reported date of construction, the probability of encountering significant amounts of lead-based coatings on building components during the partial demolition of the existing building is deemed inconsequential. Accordingly, DGS does not intend to conduct any inspections for lead-based coatings in connection with the proposed project.

## 2E.8 Summary

DAA finds *no evidence* that environmentally significant amounts of regulated substances have been released directly to soil or groundwater in the project area.

DAA finds *no evidence* that environmentally significant amounts of regulated substances have been released to groundwater in areas that are hydrogeologically upgradient of the project area.

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## 3.0 IMPACTS OF THE PROJECT

DEQ guidance for preparing an EIR (DEQ, 2013) recommends that the document contain a section referenced as "Impacts of the Project:"

- "The third section of the EIR should describe and analyze the direct, indirect, and cumulative environmental impacts of the preferred project alternative. For example, in addition to direct impacts of soil loss at the project site, soil erosion can have adverse secondary impacts on wetlands off-site which result from downstream deposition of sediments.
- "The discussion of impacts should also include impacts from activities related to the project, such as the use of pesticides or herbicides, the management of hazardous materials at the site, or handling of solid and hazardous waste generated at the site.
- "The purpose of this section is to identify the environmental consequences of proceeding with the project.
- "The identification of impacts is needed in order to properly weigh the costs of a project against its potential benefits and to evaluate needed mitigation measures.
- "Potential impacts to significant resources should be considered and discussed for each of the project alternatives.
- "Impacts should be discussed in measurable terms (acres, gallons per day, square feet, etc.) where possible.
- "The discussion should include the environmental effects of the project that cannot be avoided if the project is to be built.
- "Unavoidable impacts are those that remain after available mitigation measures have been included.
- "Agencies proposing to construct or acquire land for major state facilities should indicate whether the proposal is consistent with applicable federal and state policies, applicable local ordinances and comprehensive plans.
- "This section must identify and describe the resources present on sites of interest, and should evaluate how their use of the site may affect the resources listed below ...".

This section of the EIR describes and analyzes the direct and indirect environmental impacts of the preferred project alternative. The purpose of this section is to identify the environmental consequences of proceeding with the project. The identification of impacts is needed in order to properly weigh the costs of a project against its potential benefits and to evaluate mitigation measures that may be necessary. The potential impacts of the subject project are described below.

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**Note**. The reader will observe a significant amount of redundancy within this SECTION, and between this SECTION and portions of SECTION 2 (Affected Environment). The redundancy is inherent in the structure of the guidance document provided by DEQ (*Procedure Manual: Environmental Impact Review of Major State Facilities*. Office of Environmental Impact Review).

On behalf of DFS / OCME, DAA notified the Virginia Department of Environmental Quality (DEQ) that the subject Environmental Impact Report would be forthcoming (APPENDIX 3).

## 3.1 Endangered, Threatened, or Rare Plants, Animals, or Insects

As discussed above (SECTION 2B), during a visit to the *project area*, DAA did *not* observe any evidence of endangered-threatened-rare plants or animals, or any evidence of habitat associated with such plants or animals, on or immediately adjacent to the *project area*.

Information extracted from the DGIF database indicates that several *species of potential concern* are believed to occur within three miles of the proposed *project area*. As discussed in SECTION 2B, we find *no evidence* that the preferred habitats of any species of potential concern occur within the *project area*.

As noted above, the *project area* is located within an urban setting; therefore, our evaluation suggests that the proposed site activity is not likely to jeopardize habitat deemed suitable for the proliferation of terrestrial wildlife, including birds (other than those seemingly adapted to the urban environment, such as pigeons).

Conclusion. Proceeding with the proposed project is *not* likely to jeopardize any *endangered*, *threatened*, or *rare plants*, *animals*, or *insects*, nor is it likely to destroy or adversely modify the critical habitat of such species.

## 3.2 Significant Habitat for Terrestrial Wildlife and Birds

As discussed above (SECTION 2B), during a visit to the *project area*, DAA did *not* observe any evidence of habitat deemed suitable for the proliferation of terrestrial wildlife, including birds other than those adapted to the urban environment (such as pigeons).

Information extracted from the DGIF database indicates that various species of potential concern are believed to occur within three miles of the proposed *project area*. As discussed in SECTION 2B, we find *no evidence* that the preferred habitats of any species of potential concern occur within the *project area*.

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As noted above, the *project area* is located within an urban setting; therefore, our evaluation suggests that the proposed site activity is *not* likely to jeopardize habitat deemed suitable for the proliferation of terrestrial wildlife, including birds (other than those seemingly adapted to the urban environment, such as pigeons).

Conclusion. Proceeding with the proposed project is not likely to jeopardize any significant habitat for terrestrial wildlife and birds.

## 3.3 Other Unique or Important Terrestrial Vegetation

As discussed above (SECTION 2B), during a visit to the *project area*, DAA did *not* observe any unique or important terrestrial vegetation in, or immediately adjacent to, the *project area*. Vegetation in the *project area* is limited to landscaped plantings.

Conclusion. Proceeding with the proposed project is not likely to jeopardize any unique or important terrestrial vegetation.

## 3.4 Aquatic Life (Fisheries, Vegetation, Benthic Organisms)

As discussed above (SECTION 2B), during a visit to the *project area*, DAA did *not* observe any aquatic habitats on or immediately adjacent to the *project area*. DAA did *not* observe any evidence of wetlands at the subject property.

The Virginia Fish and Wildlife Information Service database maintained by DGIF indicates that the *project area* is located near the James River, which has been designated a confirmed anadromous and semi-anadromous fish area. The following anadromous and semi-anadromous fish have been documented during a previous study of a nearby site: alewife, striped bass, blueback herring, yellow perch, American shad, hickory shad.

Conclusion. Proceeding with the proposed project is not likely to jeopardize aquatic life.

3.5 Historic Structures, Listed or Eligible for Listing on the Virginia Landmarks Register or the National Register of Historic Places

As discussed above (SECTION 2C), DAA visited the Virginia Department of Historic Resources to review *historic cultural resources*: no *surveyed historic buildings* are located within the *project area*.

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Third Street Bethel African Methodist Episcopal Church (DHR resource 127-0274 or 127-0237-0698) is located at 614/616 North Third Street, which is approximately one block west of the project area. This structure is a contributing resource in the Jackson Ward Historic District and is listed on the National Register of Historic Places (1975) and the Virginia Landmarks Register (1975).

The *project area* is visible from the north end of the church. The visual effect of the project, once completed, will be comparable to the current visual impact.

Conclusion. Proceeding with the proposed project is *not* likely to adversely affect any listed historic structures.

## 3.6 Archaeological Sites

As discussed above (SECTION 2C), DAA visited the Virginia Department of Historic Resources to review *archeological resources*. Based upon a review of publicly available resources at the DHR, we find *no evidence* of *surveyed archaeological resources* within the *project area*.

The proposed *project area* consists of previously developed property on which a large building and parking lot are currently located. Because of the highly disturbed nature of the *project area*, the probability that intact archeological resources are present within the *project area* is deemed relatively low.

During 2016, DAA conducted a geotechnical study of the northeastern half of the project area (in the existing parking lot). Based upon the results of research and observations made during drilling, we find no evidence that significant archaeological resources remain in the project area.

Conclusion. Proceeding with the proposed project is *not* likely to adversely impact any archeological sites. Nonetheless, in the event that archeological artifacts are discovered during demolition and/or construction, DFS shall notify DHR.

## 3.7 Agricultural Lands (Prime or Important)

As discussed above (SECTION 2B), during a visit to the *project area*, DAA did *not* observe any agricultural land on or adjacent to the *project area*.

As discussed above (SECTION 2B), the *project area* is underlain by soils described as "Urban Land" and "Udorthents-dumps complex, pits."

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Soils located within the *project area* have been previously disturbed and permanently altered during prior development of the site. The area is no longer viewed as an agricultural resource.

Conclusion. Proceeding with the proposed project is not likely to adversely impact any agricultural lands.

3.8 Forest Land, including Predominant Tree Species and any Endangered, Threatened, or Rare Tree Species

As discussed above (SECTION 2B), during a visit to the *project area*, DAA did *not* observe any forested land on or immediately adjacent to the *project area*. Vegetation in the *project area* is limited to landscaped plantings.

Conclusion. Proceeding with the proposed project is *not* likely to adversely impact any *forest* land.

#### 3.9 Tidal and Non-Tidal Wetlands

As discussed above (SECTION 2B), during a visit to the *project area*, DAA did *not* observe any wetlands on or immediately adjacent to the *project area*.

As discussed above (SECTION 2B), DAA reviewed the National Wetlands Inventory (NWI) map of the Richmond, Virginia, topographic quadrangle, as prepared by the U.S. Department of the Interior. The National Wetlands Inventory map indicates that no wetlands are located at the project site.

Conclusion. Proceeding with the proposed project is *not* likely to adversely impact any wetlands.

#### 3.10 Streams, Rivers, Lakes and Ponds on or near the Site

As discussed above (SECTION 2B), during a visit to the *project area*, DAA did *not* observe any streams, rivers, lakes, or ponds on, or immediately adjacent to, the *project area*.

Based upon a review of surface topography, surface water the *project area* would be expected to flow naturally toward the northeast, toward the confluence of Bacons Quarter Branch and Shockoe Creek, ultimately discharging to the James River.

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Multiple stormwater drains are located on the surrounding streets. In the presence of a stormwater conveyance system, actual patterns of surface water flow may differ substantially from natural patterns of flow.

*Conclusion*. Based upon the relatively small area involved in the proposed project, and the considerable distance between the *project area* and the James River, proceeding with the proposed project is *not* likely to adversely impact any *surface water bodies*.

## 3.11 Watersheds of Significant Importance as Public Water Supplies

According to the *Virginia Hydrologic Unit Atlas* (1991), surface water flow within the *study area* is associated with the James River drainage basin.

Conclusion. Based upon the relatively small area involved in the proposed project, and the considerable distance between the *project area* and the James River, proceeding with the proposed project is *not* likely to adversely impact any *watersheds of significant importance as a public water supply*.

## 3.12 Chesapeake Bay Preservation Areas

As discussed above (SECTION 2B), the *project area* is *not* located in a Resource Management Area or in a Resource Protection Area, as defined by the Chesapeake Bay Act.

DFS / OCME will prepare the necessary *stormwater management* plan, and *erosion and sediment control* plan, for the project.

Conclusion. Based upon the relatively small area involved in the proposed project, and the considerable distance between the proposed *project area* and the James River, proceeding with the proposed project is *not* likely to adversely impact any *Chesapeake Bay Preservation Areas*.

## 3.13 Virginia Coastal Resources Management Area

As discussed above (SECTION 2B), the City of Richmond is designated as part of the Virginia Coastal Resources Management Program. As such, the project must conform to regulatory programs comprising Virginia's Coastal Resources Management Program (including non-point source pollution control).

DFS / OCME will prepare the necessary *stormwater management* plan, and *erosion and sediment control* plan, for the project.

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Conclusion. Based upon the relatively small area involved in the proposed project, and the considerable distance between the proposed *project area* and the James River, proceeding with the proposed project is *not* likely to adversely impact the *Virginia Coastal Resources Management Area*.

## 3.14 100-Year Floodplains

As discussed above (SECTION 2A), DAA reviewed a portion of the FEMA flood map for the City of Richmond, Virginia. According to the FEMA map, the *study area* is determined to be "*outside the 0.2% annual chance floodplain*" (which is consistent with its topographic position).

Conclusion. Proceeding with the proposed project is not likely to adversely impact the 100-year floodplain.

## 3.15 Groundwater Characteristics

As discussed above (SECTION 2A), sedimentary strata of Cretaceous and Tertiary age overlie Petersburg Granite of late Paleozoic age, in the *project area*. Groundwater occurs in the pore spaces of stratified sedimentary units and fractures within the underlying bedrock.

Based upon a review of surface topography, groundwater beneath this parcel is expected to ultimately discharge to the James River.

The uppermost (water table) aquifer in the Richmond area is considered to be unsuitable for use as a domestic water supply because of its susceptibility to surficial contamination.

Conclusion. Proceeding with the proposed project is *not* likely to adversely impact any viable groundwater resources.

3.16 Parks and Recreation Areas, and Recreation and Open Space Resources Identified by the *Virginia Outdoors Plan* 

There are no State Natural Area Preserves under DCR's jurisdiction in the project vicinity.

Conclusion. Proceeding with the proposed project is not likely to adversely impact any parks, recreations areas, or open space resources.

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3.17 Important Natural Areas (i.e., Wildlife Refuges and Wilderness Areas, Important Natural Areas Identified by Public Agencies, and Important Private Conservation Areas)

During a visit to the *project area*, DAA did *not* observe any natural areas. The *project area* is located in an urban area, in which natural areas are wholly absent.

Conclusion. Proceeding with the proposed project is *not* likely to adversely impact any important natural areas.

## 3.18 Important Scenery

During a visit to the *project area*, DAA did *not* observe any vistas that would normally be deemed "scenic"

Conclusion. Proceeding with the proposed project is not likely to adversely impact any important scenery.

## 3.19 Air Quality (Air Pollution Emissions)

The City of Richmond is currently included within the Richmond Ozone Non-Attainment Area (as defined by the Clean Air Act).

Measures to restrict emissions of volatile organic compounds (VOCs) and oxides of nitrogen (NOx) shall be implemented, especially during ozone alert days.

Vehicles used during construction at the *project area* shall be maintained to run efficiently to help avoid excessive emissions of pollutants.

Fugitive dust must be kept at a minimum by using control methods outlined in 9 VAC 5-50-60 et seq. of the Regulations for the Control and Abatement of Air Pollution.

As required by *Regulations* (9 VAC 5-40-5600 *et seq.*), DFS / OCME (and/or its construction manager) shall adhere to the Emission Standards for Open Burning (as applicable).

Open burning will *not* occur in the *project area*.

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Limitations on the use of "cutback asphalt" asphalt would be applicable to any asphalt construction activity associated with this project. For example, time-of-year restrictions would be in effect during the months of April through October in VOC emission control areas. (9 VAC 5-40-5490 et seq.)

Cutback asphalt will *not* be used on the proposed *project*.

Conclusion. Provided that DFS / OCME adheres to the requirements outlined above, proceeding with the proposed project is *not* likely to adversely impact *air quality*.

#### Solid Waste Disposal Facilities 3.20

The Virginia Department of Environmental Quality maintains a list of permitted solid waste facilities. These facilities may be active or inactive facilities or open dumps that failed to meet RCRA Subtitle D Section 4004 criteria for solid waste landfills or disposal sites. The site was not identified on the SWL list.

Historical research revealed that areas located to the northeast and east of the intersection of North Tenth Street and Turpin Street were used as a "City Dumping Ground;" however, DAA found no evidence that the *project area* was included in the old disposal area.

Waste generated at the project site must be reduced at the source, re-used, or recycled to the extent practicable. In addition, any other wastes generated by the construction or operations of the facility must be categorized as hazardous or not and managed in accordance with federal, state, and local regulatory requirements.

Conclusion. Proceeding with the proposed project is not likely to adversely impact any solid waste disposal facilities, or be impacted by any such facilities.

#### 3.21 Geology and Mineral Resources, Caves, and Sinkholes

As discussed in SECTION 2A, a review of the geologic map of the *project area* did not reveal any evidence of mining, mineral resources, or geologic hazards. During a visit to the project area, DAA did *not* observe any evidence of geological conditions that might suggest the potential presence of mineral resources, caves, or sinkholes.

Conclusion. Proceeding with the proposed project is not likely to adversely impact mineral resources or caverns, or be adversely impacted by any caverns or associated sinkholes.

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# 3.22 Other Important Resources (Scenic Rivers, Virginia By-Ways, Important Natural Communities)

As discussed above (SECTION 2B), there are *no* designated scenic rivers in the immediate vicinity, or within the view shed of, the proposed project.

During a visit to the *project area*, DAA was *not* able to see the nearest river (James River) from the *project area*.

*Conclusion.* Proceeding with the proposed project is *not* likely to adversely impact *scenic rivers, Virginia By-Ways,* or *important natural communities.* 

## 3.23 Traffic Management

As discussed above (SECTION 2D), the project will not change any existing patterns of *traffic flow*. Temporary lane closures may be necessary to off-load construction equipment and building materials, but such closures will be minimized.

*Conclusion.* Proceeding with the proposed project is *not* likely to significantly impact the flow of traffic through and around the *project area*.

#### 3.24 Noise Control

During the construction phase, noise levels are likely to increase as a result of operating equipment. These construction-related impacts would be temporary, and would *not* adversely affect the surrounding environment beyond the existing structures of the Biotechnology Park and Interstate I-95.

Upon completion of the project, no significant net increase is noise level is anticipated.

Conclusion. Proceeding with the proposed project is not likely to result in a significant long-term increase in noise in the project area.

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## 4.0 ALTERNATIVES

This section addresses alternatives to the proposed project, which may address alternative sites, alternative designs on the proposed site, alternative methods of operation, and the no-action alternative.

#### 4.1 Preferred Alternative

The University plans to expand the existing facility in order to create the additional space required by DFS and OCME.

## 4.2 Project Justification

As discussed in Section 1.8, DFS / OCME of Forensic Science (DFS) and the Office of the Chief Medical Examiner (OCME) have shared space in the current facility for 15 years. Having both agencies under one roof has provided efficiencies for the subset of cases, which require work to be performed by both DFS and OCME.

Because of significant changes for both organizations during that time, the existing facility is no longer adequate for either DFS or OCME to operate efficiently. The proposed project is deemed necessary in order for both DFS and OCME to fulfill their missions in an efficient manner.

## 4.3 Alternatives Considered

By 2006, the administration had recognized that (1) DFS had reached full capacity of its space, (2) vacant scientific and administrative positions could not be filled because of the lack of space, and (3) case submissions were continuing to rise.

In response to these conditions, DFS was given both approval and funding to lease space at a facility being constructed across the street from the Central Forensic Laboratory. The current lease will expire this year, with no prospect of a renewal or an extension (because of a change in building ownership). These DFS operations must move to another facility.

DFS first considered leasing a different facility in order to address those growing needs. DFS explored a number of potential opportunities, with particular interest in *three* sites:

- BioTech 8 / North Fifth Street (across from existing facility)
- AMF / 8080 AMF Drive (Mechanicsville)
- Phillip Morris USA / 2001 Walmsley Boulevard (Richmond)

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An assessment of potential lease sites indicated that leasing would require making a minimum of \$50,000 in unrecoverable leasehold improvements (such as installation of specialized plumbing and ventilation systems required for safe and efficient operation of the Department of Breath Alcohol laboratory).

Additional large and unrecoverable leasehold improvements would be needed to recreate the Forensic Science Academy's mock crime scene training rooms used to train dozens of law enforcement personnel from across the Commonwealth.

Additional information concerning alternative lease sites is presented in APPENDIX 1.

Whereas DFS would have to make similar investments in a purpose-built Commonwealth-owned facility, the Commonwealth and the taxpayers would no longer bear the risk and cost of having to recreate those facilities each time the lease expires.

Based upon the assessment of leasing options, DFS determined that some form of expansion to the existing facility would be in the best interest of the Commonwealth, and the taxpayers who support these facilities.

With regard to expansion of the existing facility, DFS has explored several alternatives, most of which represent variations on either of two basic themes:

- Expand the existing building (south end of property), demolish the existing parking lot (north end of property), construct a new building in the former parking lot (north end of property)
- Demolish the existing building (south end of property), demolish the existing parking lot (north end of property), construct new buildings (north and south ends of property)

All options include the construction of a parking deck, rather than having an open-air parking lot.

Information concerning alternative design configurations is presented in APPENDIX 1.

## 4.4 No-Action Alternative

A no-action alternative must be considered even if the proponent agency deems it undesirable.

*Not* proceeding with the proposed project would unnecessarily prolong the inefficient operation of DFS.

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## 5.0 MITIGATION

This section discusses the mitigation measures proposed by DFS / OCME to minimize the environmental impacts of proceeding with the *proposed project*.

5.1 Mitigation Measures the Proponent Agency is Willing to Commit

We find no evidence that the *proposed project* is associated with significant adverse environmental impacts; therefore, DFS / OCME has not proposed any mitigation measures.

5.2 Mitigation Measures that the Proponent Agency has Considered but does not Intend to Pursue

As noted above, we find no evidence that the *proposed project* is associated with significant adverse environmental impacts; therefore, DFS / OCME has not proposed any mitigation measures.

#### 5.3 Pollution Prevention

As a State-owned facility, DFS / OCME currently incorporates the Commonwealth of Virginia's pollution prevention policy pursuant to the Code of Virginia § 10.1-1425.11.

The DEQ advocates that principles of pollution prevention be used in all construction projects as well as in facility maintenance, which includes the reduction of solid waste at the source and the use of recycled materials. DFS / OCME shall consider the following DEQ recommendations regarding pollution prevention:

- Consider development of an effective Environmental Management System (EMS).
- Consider environmental attributes when purchasing materials.
- Consider contractors' commitments to the environment when choosing among contractors.
- Include specifications regarding selection of materials (alternative fuels and energy sources) and construction practices in contract documents and requests for proposals.
- Choose sustainable practices and materials in infrastructure and building construction and design.
- Integrate pollution prevention techniques into the facility maintenance and operation to include the following: inventory control, project substitution, and source reduction.

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## 5.4 Construction Areas Watered Frequently to Reduce Dust

During construction, contractors (as warranted) must ensure that construction areas are watered sufficiently to control dust, and that construction activities will be suspended during "high winds."

## 5.5 Air Quality

Vehicles used during construction at the *project area* must be maintained to run efficiently to help avoid excessive emissions of pollutants.

Whereas no significant adverse impacts to air quality are anticipated during construction, fugitive dust must be kept at a minimum by using control methods outlined in 9 VAC 5-50-60 *et seq.* of the *Regulations for the Control and Abatement of Air Pollution*. These precautions include, but are not limited to, the following:

- use, where possible, of water or chemicals for dust control
- installation and use of hoods, fans, and fabric filters to enclose and vent the handling of dusty materials
- covering of open equipment for conveying materials
- prompt removal of spilled or tracked dirt or other materials from paved streets and removal of dried sediments resulting from soil erosion

As required by *Regulations* (9 VAC 5-40-5600 *et seq.*), DFS / OCME (and/or its construction manager) shall adhere to the Emission Standards for Open Burning (as applicable).

DFS / OCME does *not* intend to conduct open burning in connection with the proposed project.

If applicable, DFS / OCME will follow limitations on the use of "cutback asphalt" asphalt that may apply in any asphalt construction activity associated with this project. The asphalt shall be "emulsified" except when specified circumstances apply. Moreover, DFS / OCME (and/or its construction manager) should consider time-of-year restrictions on its use during the months of April through October in VOC emission control areas. (9 VAC 5-40-5490 et seq.)

DFS / OCME does *not* intend to use cutback asphalt on the proposed project.

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Background. A "cutback asphalt" is a combination of asphalt cement and petroleum solvent. "Cutbacks" are used because they reduce asphalt viscosity for lower temperature uses (tack coats, fog seals, slurry seals, stabilization material). Similar to emulsified asphalts, after a cutback asphalt is applied, the petroleum solvent evaporates leaving behind asphalt cement residue, on the surface to which it was applied.

The use of cutback asphalts is decreasing because (1) cutback asphalts contain volatile chemicals that evaporate into the atmosphere and (2) the petroleum solvents used require higher amounts of energy to manufacture and are expensive compared to the water and emulsifying agents used in emulsified asphalts

#### 5.6 Non-Toxic Materials

As a State-owned facility, DFS / OCME will make every reasonable effort to use non-toxic materials during construction.

## 5.7 Recycling Stations

As a State-owned facility, DFS / OCME (and/or its construction manager) will provide stations for the recycling of paper, cardboard, aluminum, and plastics near the construction area.

## 5.8 Intelligent Use of Pesticides and Herbicides

DFS / OCME has historically used and managed pesticides and herbicides in a manner that is in accordance with the principles of integrated pest management. Products containing volatile organic compounds as the active ingredient shall be avoided in order to protect air quality. The least toxic pesticides that are effective in controlling the target species shall be used.

#### 5.9 Water Conservation

DFS / OCME is evaluating the incorporation of water-saving features in the design of the project.

## 5.10 Energy Conservation

DFS / OCME is evaluating the incorporation of energy-saving features in the design of the project.

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## 5.11 Avoiding an Impact

The project avoids significant adverse impacts to natural resources or historic cultural resources.

## 5.12 Reducing an Impact

Construction practices shall include provisions for reducing the impact of fugitive dusts.

DFS / OCME will prepare the necessary *stormwater management* plan, and *erosion and sediment* control plan, for the project.

## 5.13 Compensation for Lost or Reduced Resources or Land Area

The *project area* is located within a fully developed, urban setting. Proposed construction will replace an area, which is currently a parking lot, with a new building. The proposed project is not associated with either an increase or decrease in land area.

## 5.14 Local Issues

DFS / OCME (and/or its construction manager) shall properly implement and maintain applicable *stormwater management*, and *erosion and sediment control*, practices.

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#### 6.0 IRREVERSIBLE ENVIRONMENTAL CHANGES

Any irreversible environmental impacts appear to be trivial because the project site is a developed area. In summary, we find *no* evidence that the proposed redevelopment is associated with significant detrimental and irreversible environmental impacts.

#### 6.1 Long - Term Impacts

We find *no* evidence for significant, irreversible, long-term impacts to the natural environment or historic cultural resources, in connection with the redevelopment of the subject property.

The *project area* is located within a fully developed, urban setting. Proposed construction will replace an area of impervious surfaces with a comparable area of impervious surfaces.

#### 6.2 Permanent Impact on Air or Water Quality

We find *no* evidence for significant, irreversible, permanent impacts to air quality or water quality in connection with the redevelopment of the subject property.

#### 6.3 Consume Large Land and Water Resources

The *project area* has already been developed and is located within an urban setting. The proposed project will *not* disturb any land that had *not* been previously developed. The proposed project, therefore, is *not* associated with a significant increase in consumption of land resources.

#### 6.4 Generate Other Demands on Surrounding Resources

We find *no* evidence of significant demands on other natural resources in connection with the redevelopment of the subject property.

### 6.5 Losses of Significant Historic or Archaeological Resources – Disturbance or Destruction

Redevelopment of the *project area* will *not* impact any known historic cultural resources, and the probability of encountering significant historic cultural resources during construction are deemed relatively low. No long-term detrimental impacts to historic cultural resources, therefore, are anticipated.

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#### **LIMITATIONS**

This report has been prepared for the exclusive use of the referenced client and DFS / OCME for specific application to the *project area*. This report should in no way be construed as our recommendation to either purchase, sell, or develop the project site.

The report was prepared in accordance with generally accepted standards of practice for environmental and hydrogeological services. No warranty, either expressed or implied, is made. This report is not to be reproduced, either in whole or in part, without written consent from DAA.

Our conclusions and recommendations are based upon information provided to us by others and professional judgement. To the best of our knowledge, information provided by others is true and correct, unless otherwise noted; however, DAA is not responsible for the accuracy of information provided by others.

Central Forensics Laboratory Environmental Impact Report DAA Project No.: R16388R-01E1 August, 2016 Page 71

#### **REFERENCES**

Daniels, P. A. Jr., E. Onuschak, Jr. 1974. *Geology of the Studley, Yellow Tavern, Richmond, and Seven Pines Quadrangles, Virginia*. Virginia Division of Mineral Resources. Report of Investigations 28.

Additional references are provide above, within the narrative portion of the report.

Central Forensics Laboratory Environmental Impact Report DAA Project No.: R16388R-01E1 August, 2016 Page 72

#### AGENCIES CONTACTED AND PERSONS INVOLVED

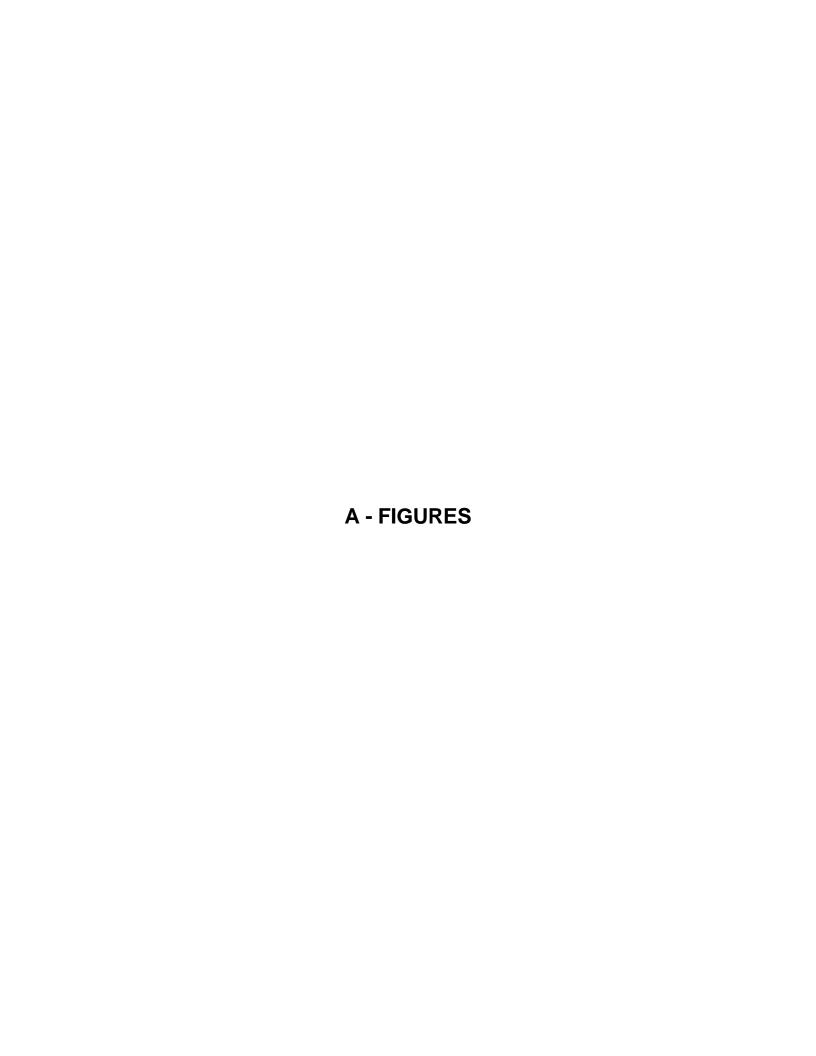
According to the "Procedure for Environmental Impact Review of Major State Facilities" (Virginia Department of Environmental Quality, 1998), "agencies that are considering major project initiatives are encouraged to contact DEQ – Office of Environmental Impact Review (DEQ-OEIR) early in order to enlist DEQ's assistance in identifying important issues, and in order to determine the level of environmental analysis necessary to satisfy the requirements of Virginia Code § 10.1-1188."

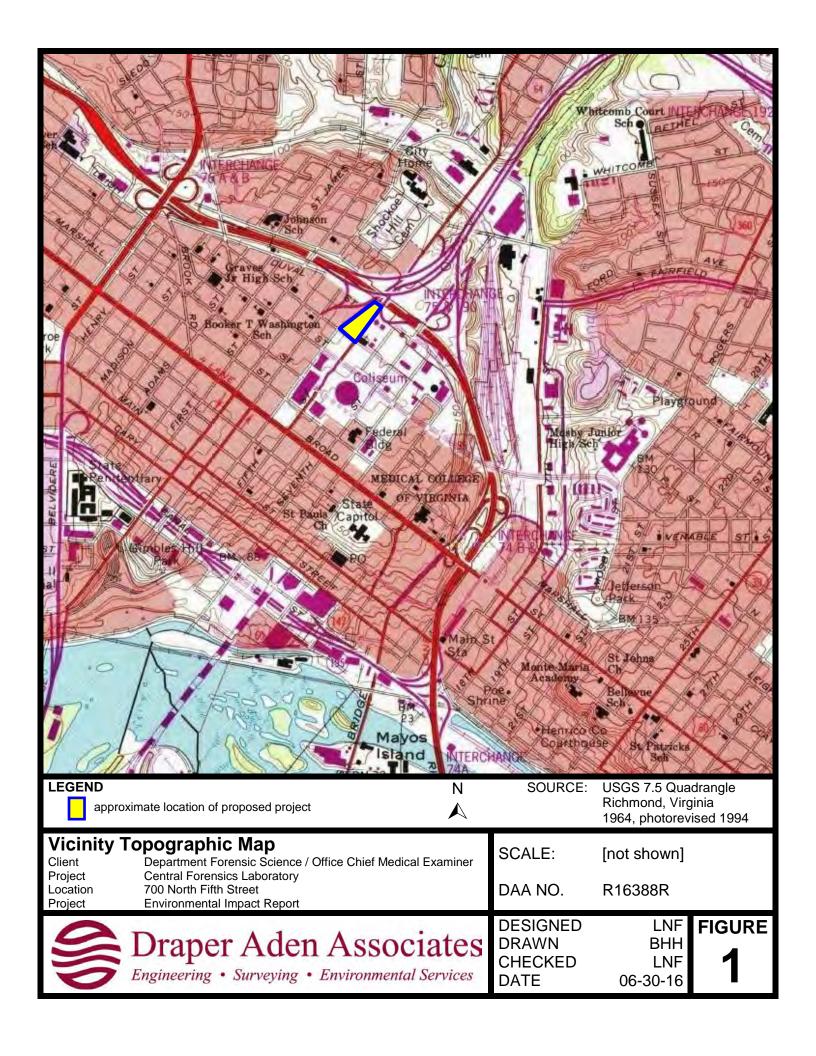
The following agencies were contacted in preparing this Environmental Impact Report.

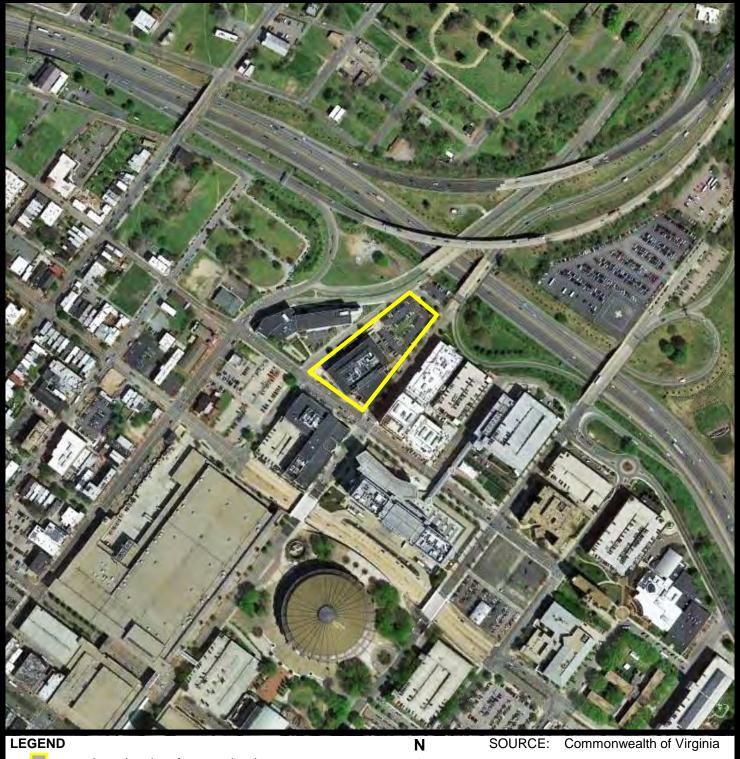
• Virginia Department of Environmental Quality (DEQ) - Environmental Impact Review Program. DAA notified DEQ that an Environmental Impact Report was being prepared for the subject project, and would be submitted to DEQ in the near future.

Ms. Valerie Fulcher Environmental Impact Review Program Manager Virginia Department of Environmental Quality Post Office Box 10009 Richmond, Virginia 23240

# APPENDIX 1 PROJECT IDENTIFICATION







Vicinity Aerial Photograph [04-05-16]

Client Department Forensic Science / Office Chief Medical Examiner

Project Central Forensics Laboratory
Location 700 North Fifth Street

Project Environmental Impact Report

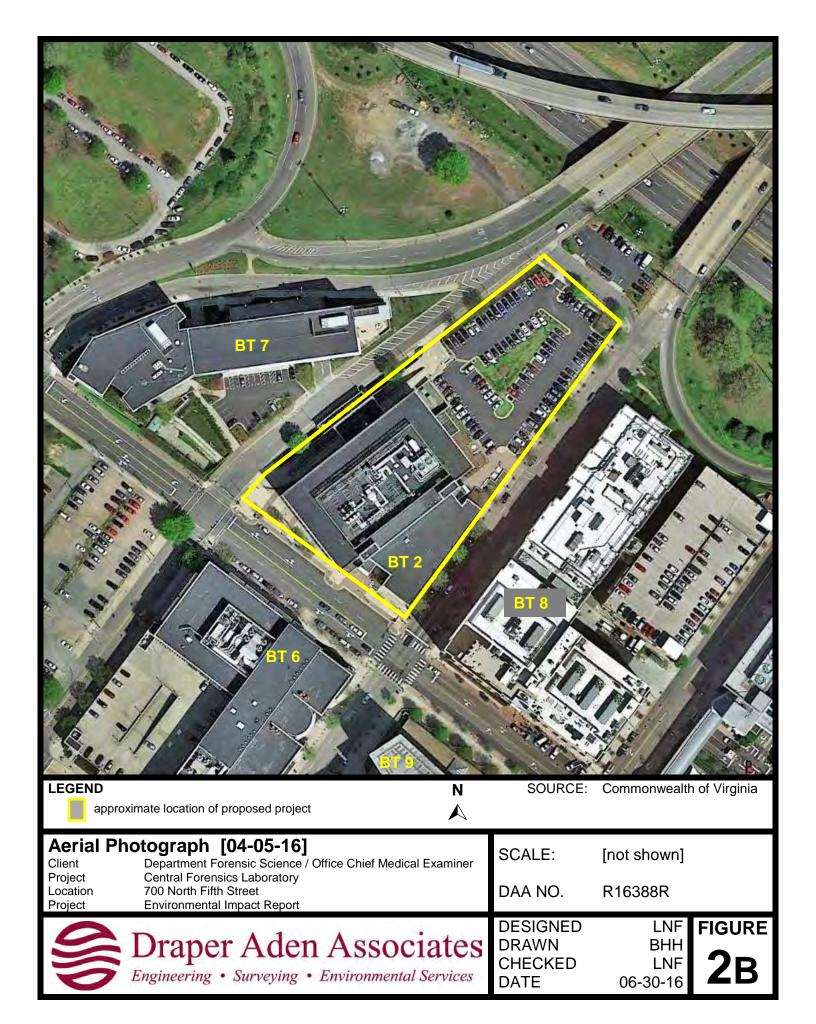
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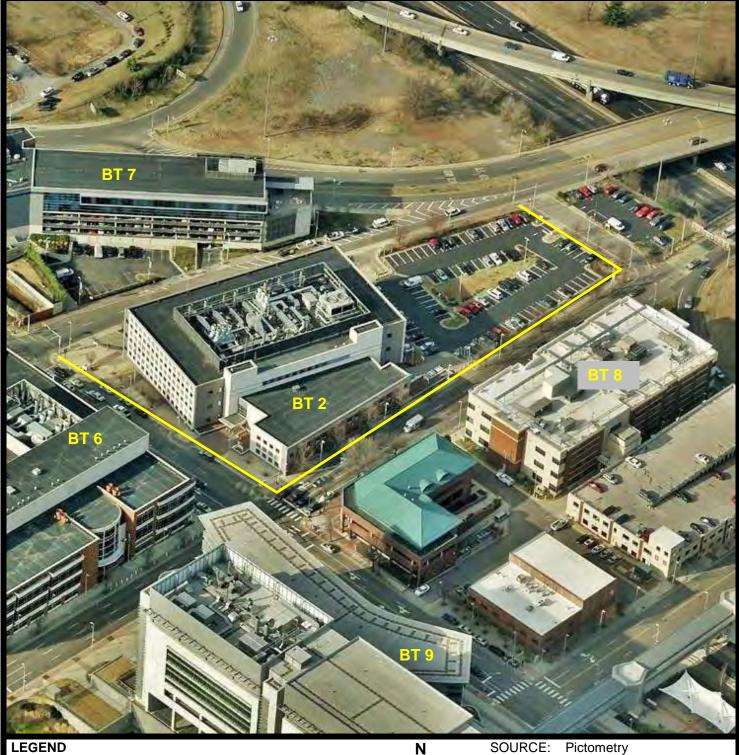
\_ \_ \_ \_ \_ \_

DAA NO. R16388R

Surveying • Environmental Services

DESIGNED LNF DRAWN BHH CHECKED LNF DATE 06-30-16 FIGURE **2A** 





N

Aerial Photograph [oblique view to north]

Department Forensic Science / Office Chief Medical Examiner Client

Project Central Forensics Laboratory

Location 700 North Fifth Street

Proiect **Environmental Impact Report**  DAA NO.

SCALE:

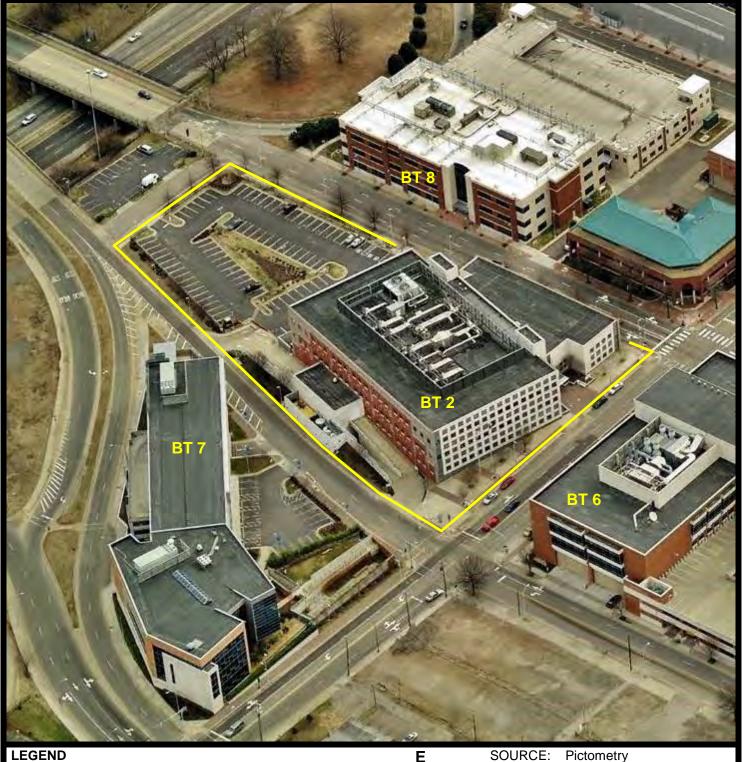
R16388R

[not shown]

Draper Aden Associates Engineering • Surveying • Environmental Services

DESIGNED **DRAWN BHH CHECKED LNF** DATE 06-30-16

**FIGURE** 



Ε 

Aerial Photograph [oblique view to east]

Department Forensic Science / Office Chief Medical Examiner Client

Project Central Forensics Laboratory Location 700 North Fifth Street

**Environmental Impact Report Project** 

Oraper Aden Associates Engineering • Surveying • Environmental Services

SCALE:

[not shown]

DAA NO.

R16388R

**DESIGNED LNF DRAWN BHH CHECKED** LNF 06-30-16 DATE

**FIGURE** 



#### Aerial Photograph [oblique view to west]

Department Forensic Science / Office Chief Medical Examiner Client

Project Central Forensics Laboratory Location 700 North Fifth Street

**Environmental Impact Report** Project

SCALE:

[not shown]

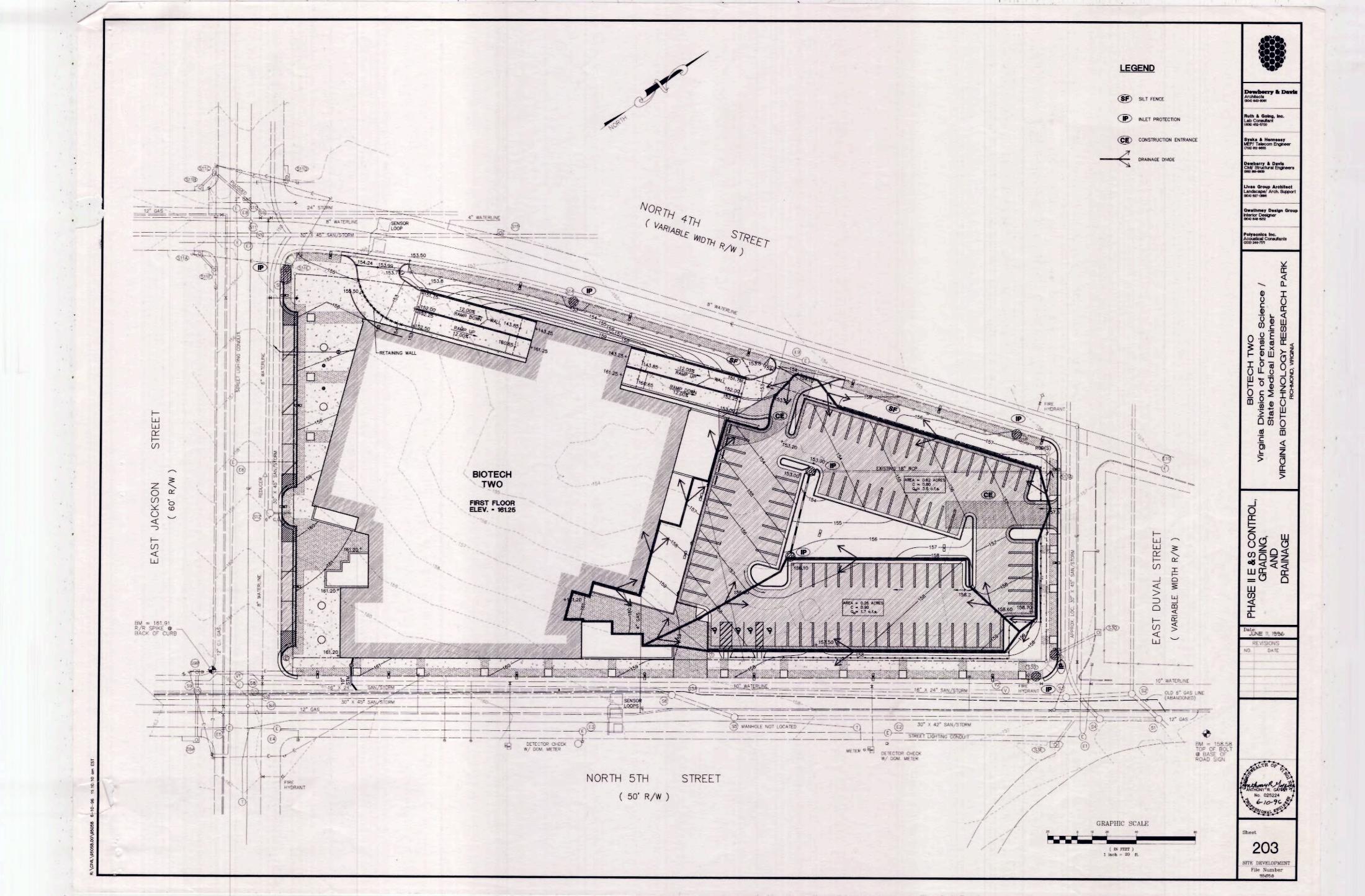
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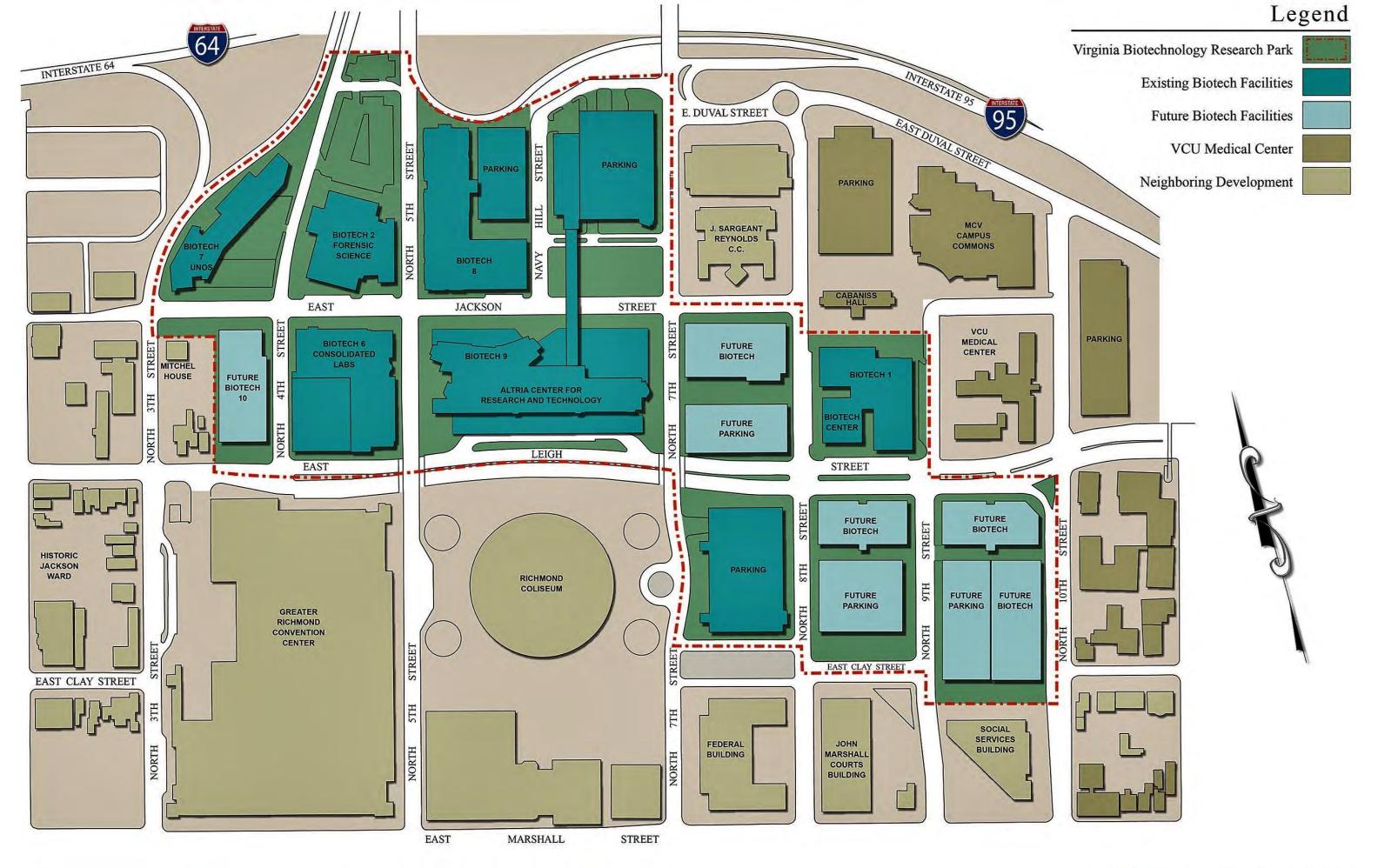
R16388R



**DESIGNED LNF DRAWN** BHH **CHECKED** LNF 06-30-16 DATE

FIGURE





Property: 700 N 5th St Parcel ID: N0000021003

Parcel

Street Address: 700 N 5th St Richmond, VA 23219-1416

Alternate Street Addresses: 400 E Jackson St

Owner: COMMONWEALTH OF VIRGINIA DEPT OF FORENSIC SCIENCE Mailing Address: 1100 BANK STREET SUITE 506, RICHMOND, VA 2321900000

Subdivision Name: NONE **Parent Parcel ID:** 

Assessment Area: 411 - Jackson/Carver

Property Class: 516 - B Research and Development

Zoning District: RP - Research Park

Exemption Code: 209 - State Government (Other)

**Current Assessment** 

Land Value: \$4,095,000 Improvement Value: \$20,053,000 Total Value: \$24,148,000

Area Tax: \$0

Special Assessment District: General-Tax Exempt

Land Description

Parcel Square Feet: 102366

Acreage: 2.35

Property Description 1: 0505.05X0257.95 IRG0002.353 AC **State Plane Coords( ?<#>):** X= 11792022.050190 Y= 3724624.224675 Latitude: 37.54711882, Longitude: -77.43373543

Description

Land Type: Primary Commercial/Indust Land

Topology: Front Size: 505 Rear Size: 257 Parcel Square Feet: 102366

Acreage: 2.35

Property Description 1: 0505.05X0257.95 IRG0002.353 AC

Subdivision Name: NONE

**State Plane Coords( ?<#>):** X= 11792022.050190 Y= 3724624.224675

Latitude: 37.54711882, Longitude: -77.43373543

Other

Street improvement:

Sidewalk:

#### Assessments **Land Value Improvement Value Total Value Assessment Year** Reason 2017 \$4,095,000 \$20,053,000 \$24,148,000 Reassessment 2016 \$4,095,000 \$20,053,000 \$24,148,000 Reassessment 2015 \$3,987,000 \$20,161,000 \$24,148,000 Reassessment 2014 \$3,987,000 \$20,161,000 \$24,148,000 Reassessment 2013 \$3,987,000 \$20,161,000 \$24,148,000 Reassessment 2012 \$3,987,000 \$20,161,000 \$24,148,000 Reassessment 2011 \$3,987,000 \$20,161,000 \$24,148,000 CarryOver 2010 \$24,148,000 \$3,987,000 \$20,161,000 Reassessment 2009 \$3,987,000 \$20,161,000 \$24,148,000 Reassessment 2008 \$3,987,000 \$20,161,000 \$24,148,000 Reassessment 2007 \$3,908,000 \$20,161,000 \$24,069,000 Reassessment 2006 \$3,312,000 \$17,085,900 \$20,397,900 Reassessment 2005 \$2,535,700 \$11,275,400 \$13,811,100 Reassessment 2004 \$2,305,200 \$10,738,500 \$13,043,700 Reassessment 2003 \$2,216,500 \$10,325,500 \$12,542,000 Reassessment 2002 \$2,173,000 \$10,123,000 \$12,296,000 Reassessment

#### Transfers

Halisters								
Transfer Date	Consideration Amount	Grantor Name	Deed Reference	Verified Market Sale Description				
01/26/2016	\$0	COMMONWEALTH OF VIRGINIA	ID2016-1233	2 - INVALID SALE-Relation Between Buyer/Seller				
02/06/2007	\$0	COMMONWEALTH OF VIRGINIA	ID2007-4442	2 - INVALID SALE-DO NOT USE				
06/27/1996	\$0	Not Available	09600-13215					
04/10/1987	\$52,500	Not Available	000120- 00472					
08/26/1980	\$32,700	Not Available	000771- 00613					

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Planning
     Master Plan Future Land Use(?<#>): DT-UC
                   Zoning District(?<#>): RP - Research Park
                 Planning District(?<#>): Downtown
                      Traffic Zone(?<#>): 1046
         City Neighborhood Code(?<#>): BIO
         City Neighborhood Name(?<#>): Biotech and MCV District
                       Civic Code(?<#>):
          Civic Association Name(?<#>):
                     Subdivision Name: NONE
      City Old and Historic District(?<#>):
          National historic District(?<#>):
         Neighborhoods in Bloom(?<#>):
Redevelopment Conservation Area(?<#>):
 Economic Development
                        Care Area(?<#>): -
                  Enterprise Zone(?<#>): III
 Environment
        100 YEAR Flood Plain Flag(?<#>): Data Not Available. Contact Zoning at 646-6340.
        500 YEAR Flood Plain Flag(?<#>): Data Not Available. Contact Zoning at 646-6340.
         Resource Protection Flag(?<#>): Data Not Available. Contact Zoning at 646-6340.
                     Wetland Flag(?<#>): Data Not Available. Contact Zoning at 646-6340.
 Census
                                                                                            Tract
      Census Year
                                   Block
                                                          Block Group
                                                         0302002 (?<#>)
                                                                                       030200 (?<#>)
          2000
                               2003 (?<#>)
          1990
                                101 (?<#>)
                                                         0302001 (?<#>)
                                                                                       030200 (?<#>)
 Schools
               Elementary School(?<#>): Carver
                    Middle School(?<#>): Hill
                     High School(?<#>): Armstrong
 Public Safety
                   Police Precinct(?<#>): 4
                     Police Sector(?<#>): 413
                      Fire District(?<#>): 5
                   Dispatch Zone(?<#>): 097B
 Public Works Schedules
                     Street Sweep(?<#>): TBD
                   Leaf Collection(?<#>): TBD
                Refuse Collection(?<#>): Wednesday
                  Bulk Collection(?<#>):
 Government Districts
                  Council District(?<#>): 6
                    Voter Precinct(?<#>): 607
              State House District(?<#>): 71
              State Senate District(?<#>): 9
            Congressional District(?<#>): 4
```

#### **Extension 1 Details**

Extension Name: C01 - BioTech 2

Year Built: 1998 Stories: 3

Units: 0

Number Of Rooms: 0

Number Of Bed Rooms: 0 Number Of Full Baths: 0

Number Of Half Baths: 0

Condition: good for age

Foundation Type:

1st Predominant Exterior:

2nd Predominant Exterior: N/A

Roof Style: 1

**Roof Material:** Interior Wall:

Floor Finish:

Heating Type: 0 sf

Central Air: N

Basement Garage Car #: 0

Fireplace: N

**Building Description (Out Building and Paving** 

Yard Items):

#### **Extension 1 Dimensions**

Finished Living Area: 115961 Sqft

Attic: 0 Sqft

Finished Attic: 0 Sqft

Basement: 32882 Sqft

Finished Basement: 0 Sqft

Attached Garage: 0 Sqft

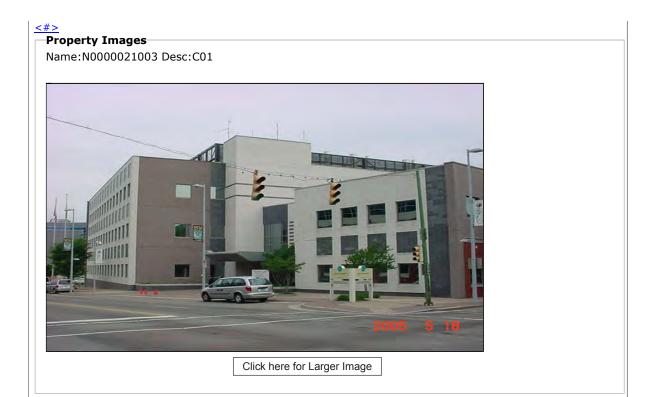
Detached Garage: 0 Sqft

Attached Carport: 0 Sqft

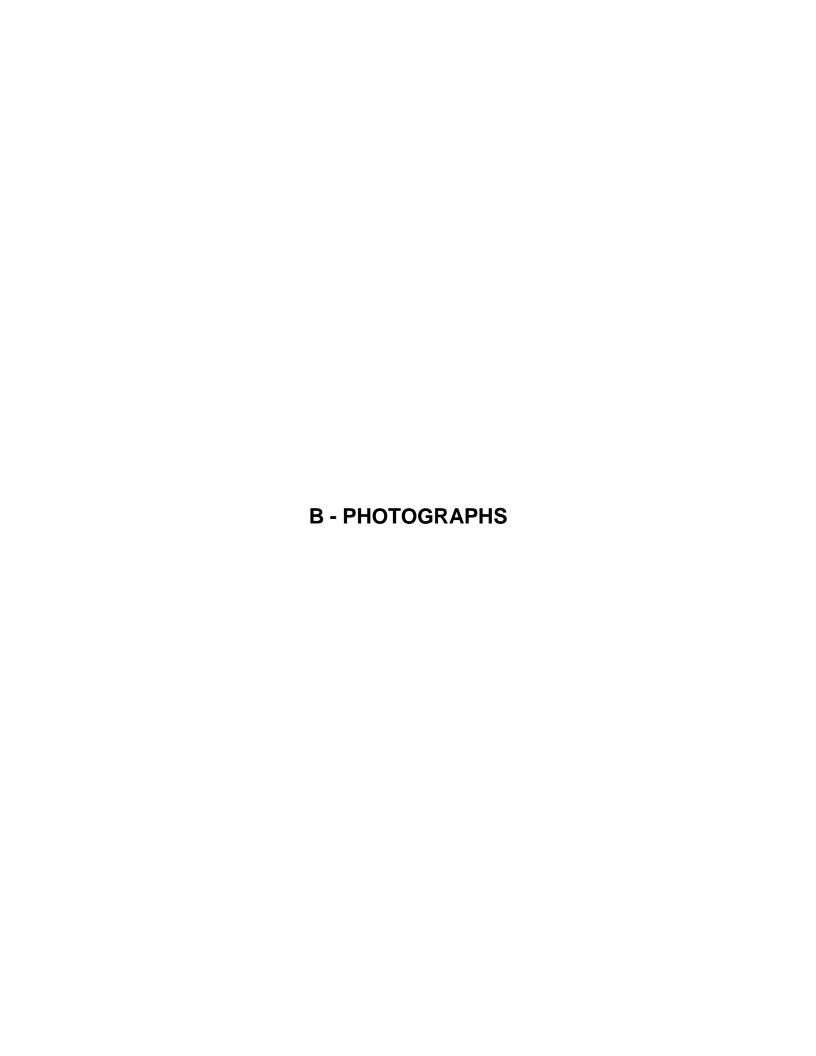
Enclosed Porch: 0 Sqft

Open Porch: 0 Sqft

Deck: 0 Sqft



<b>Sketch I</b> Jame: De			
	Image Not Availabl	e	
		-	



Project: Central Forensics Laboratory

Date photographed: 07-10-16



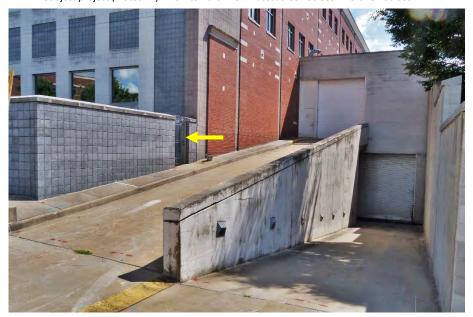
P1 - Subject project (Biotech 2). View to east from East Jackson Street x North 4<sup>th</sup> Street.



P3 - Subject project (Biotech 2). Loading ramps at west corner.



P2 - Subject project (Biotech 2). View to north from East Jackson Street x North 5<sup>th</sup> Street.



P4 - Subject project (Biotech 2). Loading ramps at north corner. Transformers behind wall [arrow].

Project: Central Forensics Laboratory

Date photographed: 07-10-16



P5 - Subject project (Biotech 2). Facility parking lot. View to southeast from north corner of site.



P7 - Subject project (Biotech 2). Facility parking lot. View to NNE from back of building.



P6 - Subject project (Biotech 2). Facility parking lot. View to south [continued from P5].



P8 - Subject project (Biotech 2). Facility parking lot. View to northeast [continued from P7].

Project: Central Forensics Laboratory

Date photographed: 07-10-16



P9 - Biotech 8 (adjacent facility to SE). View to NNE from west side of North 5<sup>th</sup> Street.



P11 - Biotech 9 (adjacent facility to south). View to south from East Jackson Street x North 5<sup>th</sup> Street.

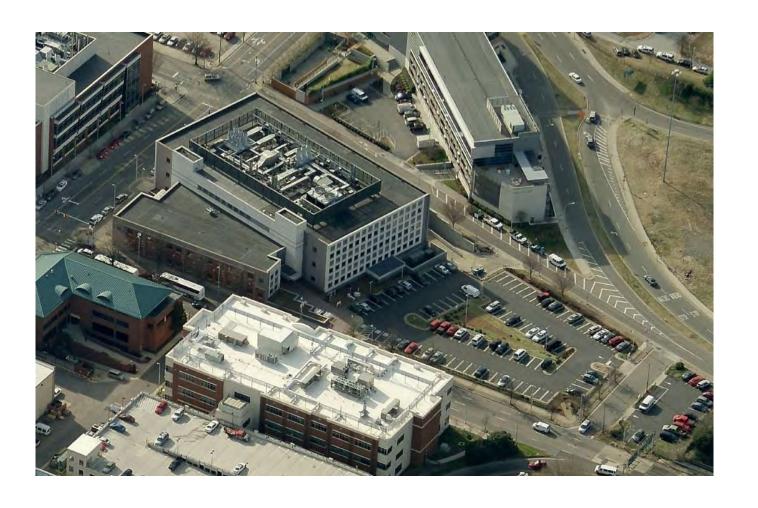


P10 - Biotech 8 (adjacent facility to SE). View to east from East Jackson Street x North 5<sup>th</sup> Street.



P12 - Biotech 7 (adjacent facility to NW). View to north from East Jackson Street x North 4<sup>th</sup> Street.





## SPACE EXPANSION STUDY DFS & OCME CENTRAL FACILITY – RICHMOND, VIRGINIA

PREPARED FOR:

DEPARTMENT OF FORENSIC SCIENCE AND OFFICE OF CHIEF MEDICAL EXAMINER
RICHMOND, VA

#### PREPARED BY:

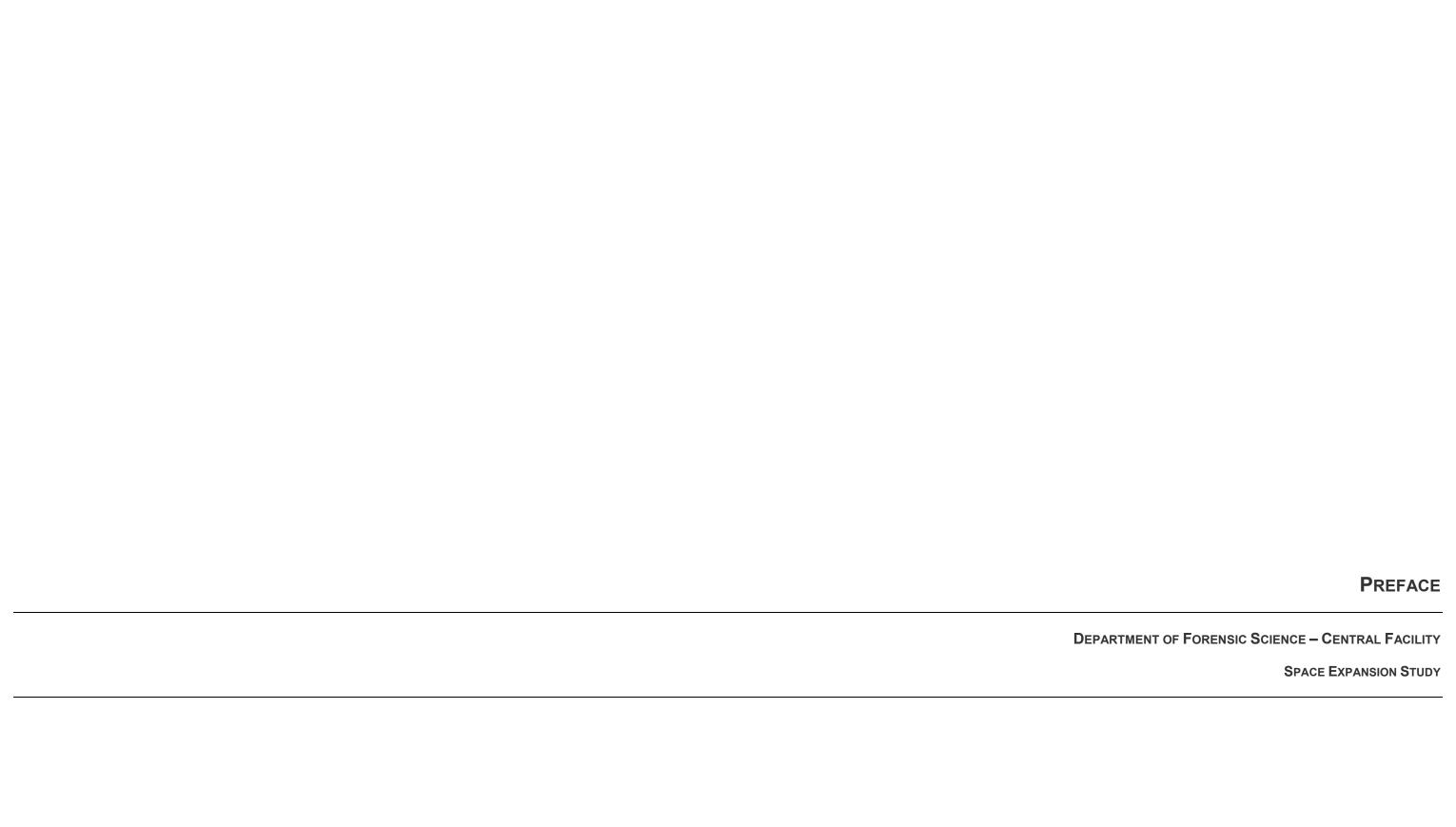
COMMONWEALTH ARCHITECTS
PROGRAMMING & CONCEPTUAL BUILDING DESIGN

WILEY|WILSON CONCEPTUAL ENGINEERING SYSTEMS

**JUNE 7, 2013** 

June 7, 2013

Central Forensic Laboratory JustificationPreface					
Introduction & SummarySection 1					
Overview Methodology Area Summary Cost Summary Mechanical Systems Summary Electrical Systems Summary					
Existing ConditionsSection 2	2				
Existing Departmental Location Plans					
Proposed Concept PlanSection	3				
Preliminary Departmental Location Plans with Addition Building Addition Elevation Three Dimensional (3D) Building Addition Sketch					
Opinions of Probable Construction CostsSection	4				
Not Included					
AppendicesSection 5	5				
Detailed Departmental Statistical Space Requirements					



#### The following preface was provided by The Department of Forensic Science and the Office of the Chief Medical Examiner.

The Department of Forensic Science (DFS) and the Office of the Chief Medical Examiner (OCME) have shared space in the current facility for 15 years. Having both agencies under one roof has provided efficiencies for the subset of cases which require work to be performed by both DFS and OCME. However, due to significant changes for both entities over the last 15 years, the current facility is no longer adequate for either DFS or OCME to operate in the most efficient manner possible. While there are some similarities between the two agencies, each organization has different individual needs which are driving the request for a larger facility.

#### OCME's current workspace is insufficient to properly house its staff, which has doubled since first occupying the facility 15 years ago

- In the autopsy rooms—the heart of OCME's mission—overcrowding routinely reaches levels that teams working on autopsies are beginning to bump into each other while performing their work. This reduces worker safety given the routine use of sharp instruments and the exposure to tissue and fluids that may contain harmful or even lethal infectious diseases.
- Due to the large staffing increases at OCME, spaces that were designed for one employee are being shared by two or three employees. In other cases, employees have to use the hallways as workspace, creating a louder, more chaotic and less productive environment.
- Due to current space limitations, some employees are working from nearby leased space. However, their need to regularly return to the main OCME facility for meetings, files, and records reduces their efficiency and productivity.
- Workforce projections call for OCME staff to double in size again in the next 13 years. Given the current lack of space, there is no way for OCME to undertake its projected expansion in the current facility.

#### OCME's current workplace is inadequate to house both current equipment and newer investigative tools that will be coming online in the next 1-10 years.

- OCME lacks adequate storage space for cadavers donated to the state anatomical program. This causes OCME to decline nearly half of the cadavers that are offered resulting in a shortage of bodies at a time when the Commonwealth is seeing a growth in enrollment in Medical and Osteopathic schools.
- OCME is also being forced to dispose of some tissue samples sooner than medically-expected practices would indicate due to a lack of space in the facility's tissue storage bank.
- OCME is acquiring new, productivity-enhancing, histology equipment that will lessen the amount of time it takes to process tissue samples. Unfortunately, the current facility is physically unable to house this new equipment due to lack of space.
- OCME needs to bring online MRI and CAT scanning equipment. These imaging methodologies are becoming standard equipment in Medical Examiner offices nationwide but are unable to be deployed at the current facility due to lack of space.

#### DFS staffing needs have grown since becoming a standalone agency

- Since moving into its current facility, DFS staff has increased by ~50%. That staff count is projected to continue to rise as new investigative methodologies come on-line and as appellate courts hand down decisions requiring additional in-person staff testimony concerning investigative methods in trials across Virginia.
- While Forensic Science has existed as part of other agencies since the 1970's, DFS became a separate agency beginning July 1, 2005. Some of the functions that were previously performed by other agencies but became the responsibility of DFS include: purchasing, budgeting, financial and informational reporting, grants management, accounts payable, and human resources. None of these functions were anticipated when the current facility was built and therefore there is not space to accommodate these functions.

#### DFS is also facing significant space issues in terms of its current tenancy

- In 2006 the Governor recognized that not only had DFS reached full capacity of its space but also that it had vacant scientific and administrative positions waiting to be filled, and case submissions were continuing to rise. Therefore, DFS was given both approval and funding to lease space at a facility being constructed across the street from the Central Forensic Laboratory.
- DFS is facing an expiration of its current lease in 2016 with no prospect of a renewal or an extension given the recent change in building ownership. This will require the agency to move into a new location.
- While it would be an option for DFS to move into another leased facility, doing so would require making a minimum of \$50,000 in unrecoverable leasehold improvements to install the specialized plumbing and ventilation systems needed for safe and efficient operation of the Department's Breath Alcohol laboratory.
- Additional large and unrecoverable leasehold improvements would be needed to recreate the Forensic Science Academy's mock crime scene training rooms used to train dozens of law enforcement personnel from across the Commonwealth.
- While DFS would have to make similar investments in a purpose-built Commonwealth-owned facility, the Commonwealth and the taxpayers would no longer bear the risk and cost of having to recreate those facilities each time the Department's lease expires.

#### **Central Laboratory Expansion Justification**

June 7, 2013

DFS - OCME Central Facility • Space Expansion Study

#### DFS's current workspace is inadequate to efficiently house current scientific equipment and personnel

- The addition of scientific equipment to handle both the volume and complexity of cases has resulted in an overflow of equipment purchased for one section into the lab space of other sections. This creates for an inefficient work flow and ultimately increases the amount of time it takes to process some of the evidence received in criminal cases.
- In order to create more space in the labs themselves, some scientists have had their desk space moved away from their workbench and in some instances to another floor in the facility. This creates an inefficient workflow and further slows down processing productivity.

The best long term answer to holding onto the value of what would otherwise be spent on leasehold improvements to a new rented space while ensuring that laboratory facilities are designed to maximize scientist efficiency and productivity is to add space to the current facility and renovate the current space.



#### Overview

The Department of Forensic Science (DFS) and the Office of the Chief Medical Examiner have commissioned this Space Expansion Study of the Central Forensic Laboratory (CFL) located at 700 North 5<sup>th</sup> Street in Richmond, Virginia to help determine the amount of assignable area and approximate gross area required to accommodate the projected space needs of the CFL facility through the year 2026. As part of the study, one (1) conceptual design option for meeting the Central Forensic Laboratory's growth and space consolidation needs is included herein. The conceptual design option included with this study illustrates a new building addition with an underground parking garage to be built on the existing state owned property adjacent to the existing CFL building. The adjacent site is currently utilized as a surface parking lot for CFL use.

The existing laboratory facility known as the Biotech Two (2) building is approximately 134,106 square feet in size and houses the Central Region Administrative offices and Forensic Science Laboratories for the Department of Forensic Science (DFS) as well as the Office of the Chief Medical Examiner (OCME) and the Central Region Medical Examiner's offices and laboratories. Since it's occupancy in the late 1990's, the Department of Forensic Science and the Office of the Chief Medical Examiner have expanded into leased facilities in the Biotech Eight (8) building located across the street from Biotech 2. Current "rentable area" in Biotech 8 is estimated to be approximately 22,400 square feet. In total, the DFS and OCME Central Facility currently occupy approximately 156,500 square feet of space. The space in the Biotech 8 building is primarily occupied by departments that provide statewide administrative support for DFS and OCME.

#### Methodology

The process for developing the Space Study involved the following:

- 1. Collect, verify and analyze quantitative departmental requirements provided by DFS and OCME representatives.
- 2. Develop overall future space needs based on this data
- 3. Develop a Preliminary Concept Plan for a proposed building addition
- 4. Develop a Preliminary Opinion of Cost for the building addition and other project costs

Quantitative information regarding current and projected departmental space usage was provided to Commonwealth Architects by DFS and OCME representatives. Commonwealth Architects then observed the conditions of the current occupied spaces via escorted tours of the existing facilities to verify the information gathered in the interviews and to survey for items that may have been overlooked or omitted as well as to gain a better understanding of the DFS and OCME current and future operational needs for the Central Facility. The quantitative information collected was assembled into Statistical Space Requirement tables illustrating current and year 2026 requirements. Space assigned to each staff category, support area, and equipment was calculated based on the 2012 CPSM, Guidelines for Space Planning.

Based on the projected space requirements, Commonwealth Architects developed a conceptual plan for a building addition including an underground parking garage for approximately 287 vehicles and developed preliminary costs for the proposed project. Wiley|Wilson reviewed the existing building's engineering systems to determine the adequacy in meeting the needs of the conceptual expansion plans for both the existing facility and new addition.

#### **Space Needs Summary**

The detailed Statistical Space Requirements for each DFS and OCME Department are included in the Appendices of this report. The numbers noted below for DFS and OCME include the Central Regional Office requirements as well as the Statewide Administrative Offices for each entity. The "Assignable Area" for each group is based on the mathematical model calculated in the Statistical Space Requirements. The "Non-assignable Area" are based on the measured non-assignable areas noted in the Concept Plans developed for this Study. It is important to note that the non-assignable numbers are preliminary and are based on Concept Plans only. Further development of the building design should present opportunities to improve the efficiency of the building floor plate.

Department	Approx. Current	Current	2026	2026	
	Space Usage	Staff size	Space Req.	Projected Staff	Remarks:
Department of Forensic Science (DFS)	107,502	157	138,413	201	Approximate Assignable Space
Office of Chief Medical Examiner (OCME)	22,959	49	65,819	107	Approximate Assignable Space
"Non-assignable Area" (includes Mechanical/Electrical	22,995		75,568		Approximate Non-assignable Space based on Concept Plan
Penthouse, Shafts & Common Corridors plus exterior walls	)				
Total	153,456	206	279,800	308	Approximate Total Gross Laboratory & Office Area (does not include Garage area numbers)

June 7, 2013

DFS - OCME Central Facility + Space Expansion Study

#### **Preliminary Opinion of Project Costs**

(Not Included)

#### **Mechanical Systems Summary - EXISTING BUILDING**

<u>Air Handling Systems:</u> After reviewing the conceptual planned renovation to the existing building as developed for this study, the existing HVAC systems are considered suitable for serving the renovated building. New ductwork, diffusers and constant volume boxes will be required to serve the new room layouts. Depending upon the new room layouts, it is expected that some existing constant volume boxes may be reused.

<u>Chilled Water System:</u> The chilled water system serving the Existing Building consists of a 270-ton chiller and a 650-ton chiller. This existing chilled water system is currently loaded between 70% and 80% at maximum loads. There is also an additional 650-ton chiller in place that can be used, but a new cooling tower would be required to serve this chiller. The existing Building is considered adequate for serving the future chilled water needs of the Existing Building.

<u>Heating Hot Water System</u>: The heating hot water system serving the Existing Building consists of five 2,000 MBH input condensing boilers. Currently, the maximum load being experienced by the facility is that four boilers are operated at 40% to 45% loading. If a single boiler fails, then the remaining boilers are still able to handle the maximum building load.

Humidification: Humidification for the existing building is provided by a single steam boiler that supplies steam at 15 psig. This boiler is considered to be adequate to handle the future loads of the Existing Building.

<u>Plumbing Systems:</u> The plumbing mains (domestic water and sanitary waste) that currently serve the Existing Building are considered to be adequate to serve the future needs of the Existing Building. However, these systems will need to be reconfigured to match the new room layouts.

<u>Fire Suppression</u>: The sprinkler system serving the Existing Building should be reconfigured to match new room layouts. It is not expected that the fire hazard levels will increase from the current hazard levels. The existing fire pump is considered adequate to serve the future fire suppression needs of the Existing Building.

Mechanical Utilities: The existing mechanical utilities are considered to be adequate to serve the future needs of the Existing Building.

#### **Mechanical Systems Summary - NEW EXPANSION**

<u>Air Handling Systems</u>: The New Addition would require new mechanical systems to serve it. Air handling units would be installed in the new penthouse to serve the floors below. Due to the planned use of the spaces, the 1<sup>st</sup> and 2<sup>nd</sup> floors would be served by air handling units that are capable of utilizing return air. The 3<sup>rd</sup> and 4<sup>th</sup> floors are primarily lab spaces and would be served by air handling units that are 100% outside air. Supply air to the lab spaces would be sized to provide 6 air changes per hour, and supply air to the non-lab spaces would be sized to provide approximately 2 air changes per hour. Induced air exhaust fans on a common plenum should be used to provide exhaust to the New Addition. Preliminary sizing indicates that the exhaust for the New Addition can be handled by a single group of exhaust fans on a common base. Similar to the existing building's HVAC system, run-around heat recovery loops should be installed to recover heat from the exhaust airstream transfer it to the incoming outside airstream.

<u>Chilled Water System</u>: The chilled water load for the New Addition is sized at approximately 600-tons. The 650-ton chiller in the Existing Building that is currently not in service could be used to serve this load. However, there would be no backup capacity. It is recommended that a cooling tower be installed to be able to utilize the existing 650-ton chiller and that a new chiller, sized at approximately 600-tons, be located in the penthouse of the New Addition to serve the needs of the New Addition. The chilled water systems between the new and existing buildings should be interconnected so that the currently unused 650-ton chiller can provide backup capacity to either system.

Heating Hot Water System: New condensing hot water boilers should be installed in the New Addition to serve the building heating needs. Sizing and selection of these boilers should be based on serving the full building heating load with one boiler out of service.

Humidification: A new steam boiler should be installed in the penthouse of the New Addition to serve the humidifiers in the air handling units.

<u>Fire Suppression</u>: Since the height of the highest floor level of the New Addition is more than 30 feet above the fire department access, a Class I standpipe system is required in each of the stairwells. This type of standpipe system provides 2-1/2 inch hose connections for use primarily by trained personnel or by the fire department. These standpipes will require the installation of a new fire pump since the pressure readings are at 80 psi.

Mechanical Utilities: New mechanical utilities will be required to serve the New Addition, including domestic water, water for fire suppression, sanitary sewer and natural gas.

#### **Mechanical Systems Summary - PARKING GARAGE**

The Parking Garage should be ventilated and heated only.

#### ADDITIONAL MECHANICAL SYSTEMS RECOMMENDATIONS

It is recommended that a cross-connection be installed between the chilled water systems and heating hot water systems of the Existing Building and the New Addition so that the two systems can provide backup capacity to each other. This will also help prevent excessive cycling of chillers and boilers during low-load periods. Where possible, hot water coils should be sized for a 40 degree delta T in order to maximize the efficiency of the condensing boilers.

#### **Electrical Systems Summary - NEW EXPANSION**

<u>Main Electrical Service</u>: The New Addition would not require an additional electrical service. The existing Switchboard and generator system have enough spare capacity for the new systems. A new MCC would be placed in the penthouse to service the mechanical systems and lighting and receptacle panels will be placed in the smaller electrical closets on each floor. The entire existing electrical system is on the emergency generator system.

Fire Alarm Systems: Additional fire alarm sub panels will be installed on each floor in the electrical closets and networked back to the head end equipment in the existing building.

Communication Systems: New patch panels will be installed on each floor in the electrical closets with a fiber switch located on the first floor to connect to the existing communication room in the existing section of the building.

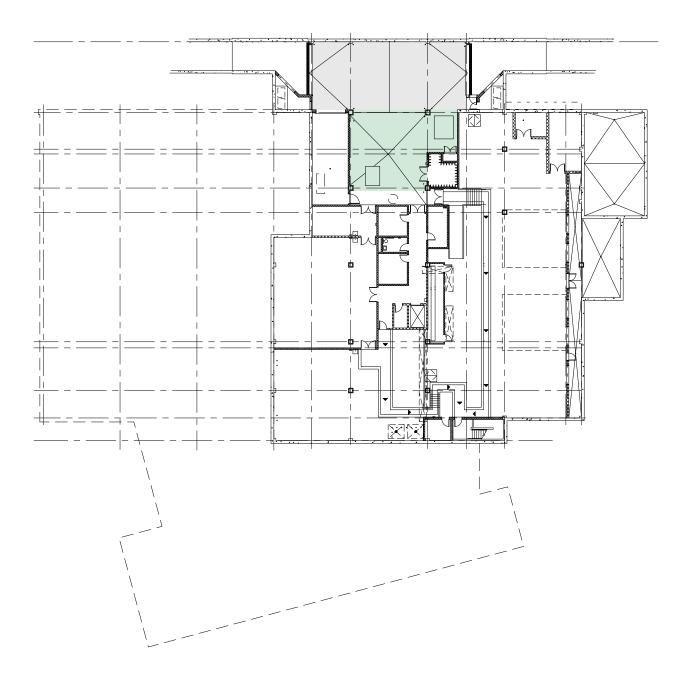
Fire Pumps: An additional electrical service will be tapped from the existing pad mounted transformer for the new fire pumps and an additional breaker will be added to the existing emergency generator for the new fire pumps.

Electrical Systems Summary - PARKING GARAGE - The Parking Garage would have a single electrical panel fed from the existing service. LED security surface mounted light fixtures would provide required lighting.



#### **ROOM SCHEDULE**

- BUILDING CORE/UNASSIGNABLE
- DFS DNA DATA BANK
- ☐ VERTICAL & HORIZONTAL CIRCULATION



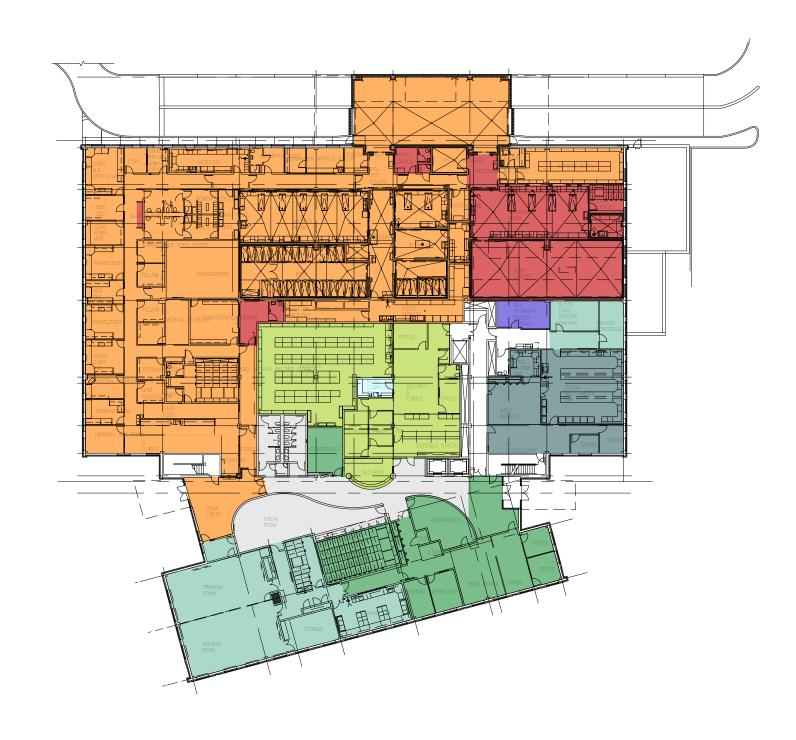


EXISTING BASEMENT



#### ROOM SCHEDULE

- ☐ BUILDING CORE/UNASSIGNABLE
- DAF INFO. TECH.
- DFS CENTRAL LAB ADMIN.
- DFS CENTRAL LAB TRAINING & BREAK AREA
- DFS DIGITAL & MULTIMEDIA
- DFS EVIDENCE RECEIVING
- DFS FORENSIC BIOLOGY/ DNA SECTION
- OCME
- VA ANATOMICAL
- ☐ VERTICAL & HORIZONTAL CIRCULATION



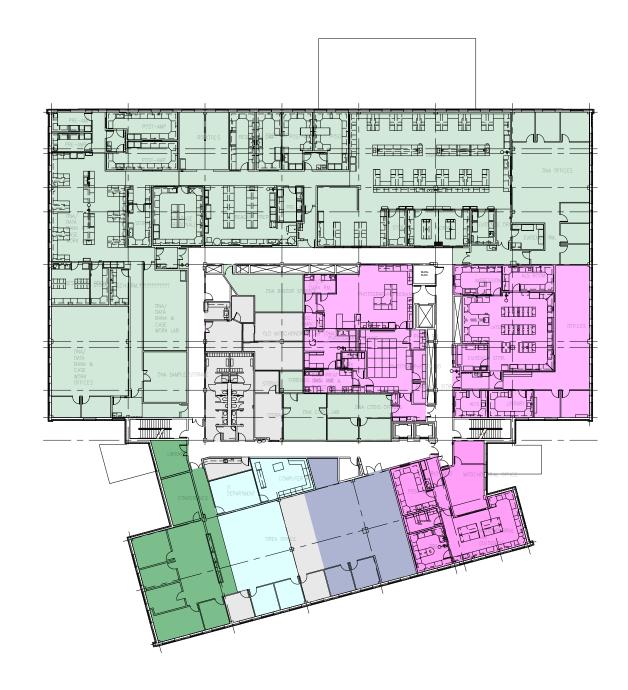


EXISTING FIRST FLOOR PLAN



#### **ROOM SCHEDULE**

- BUILDING CORE/UNASSIGNABLE
- DAF INFO. TECH.
- DFS CENTRAL LAB ADMIN.
- ☐ DFS DNA DATA BANK
- DFS FIREARMS
- DFS LATENT PRINTS
- DFS MITOCHONDRIAL DNA
- ☐ VERTICAL & HORIZONTAL CIRCULATION

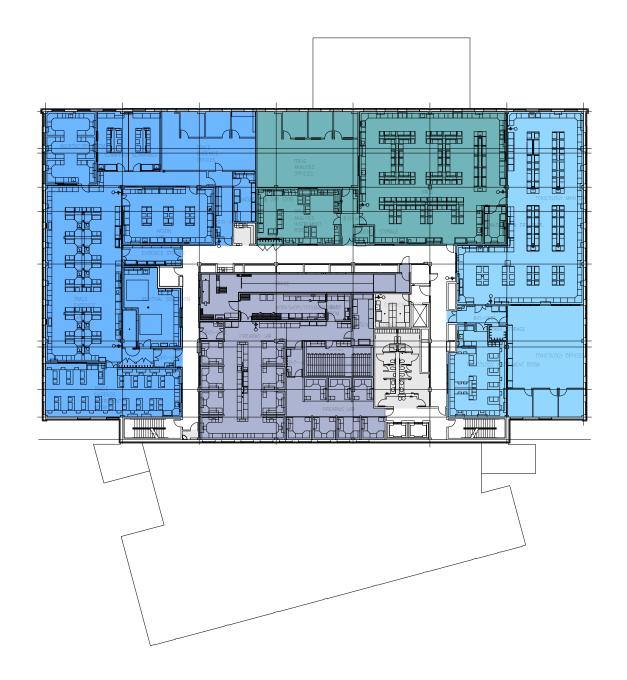




EXISTING SECOND FLOOR PLAN



# ROOM SCHEDULE BUILDING CORE/UNASSIGNABLE DFS CONTROLLED SUBSTANCES DFS FIREARMS DFS TOXICOLOGY DFS TRACE EVIDENCE VERTICAL & HORIZONTAL CIRCULATION



# Department of Forensic Science CENTRAL FORENSIC LAB



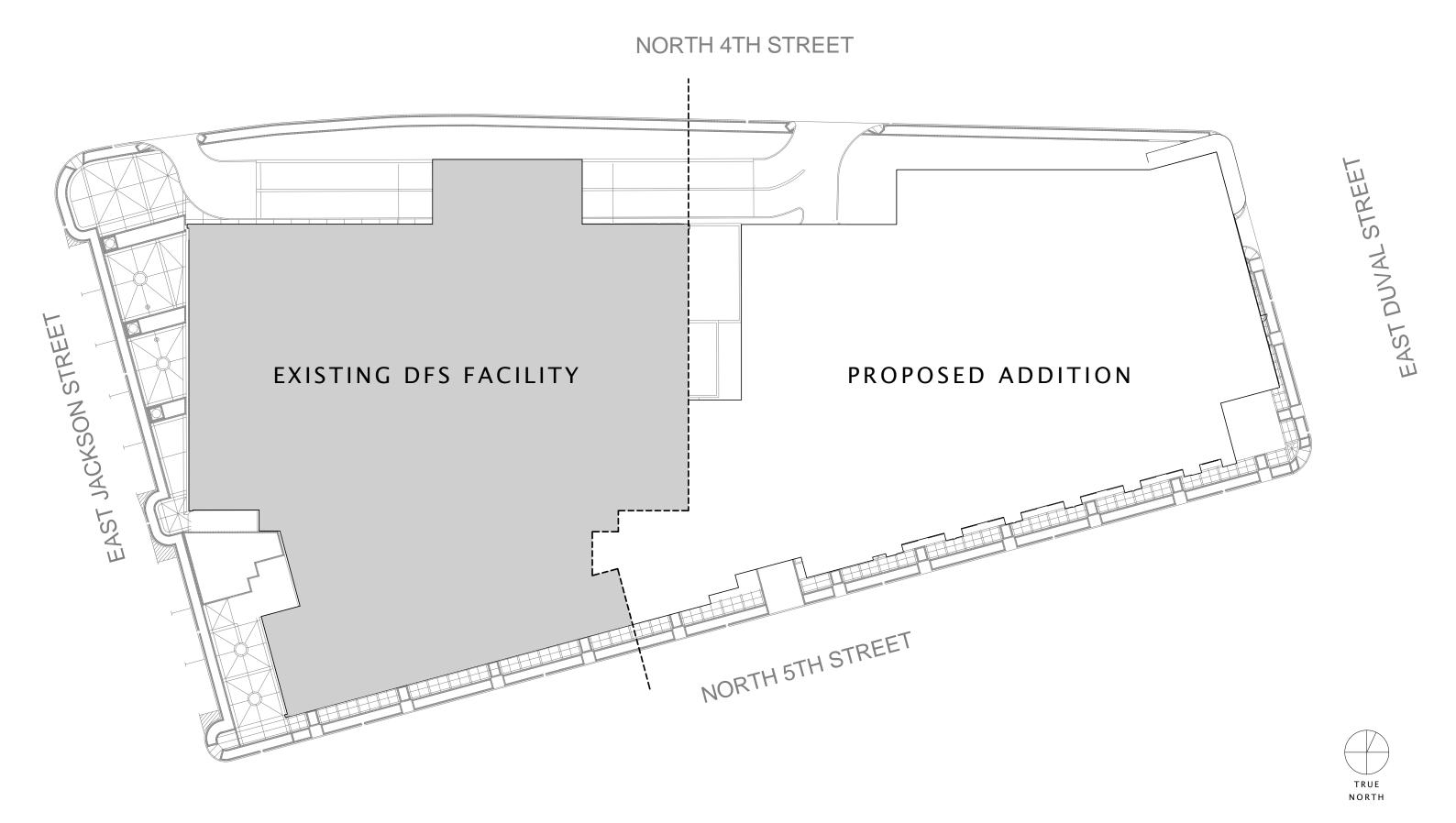


BIOTECH 8



Proposed Conceptual Plans – Section 3
DEPARTMENT OF FORENSIC SCIENCE – CENTRAL FACILIT  SPACE EXPANSION STUD
GFACE EXPANSION GTOD

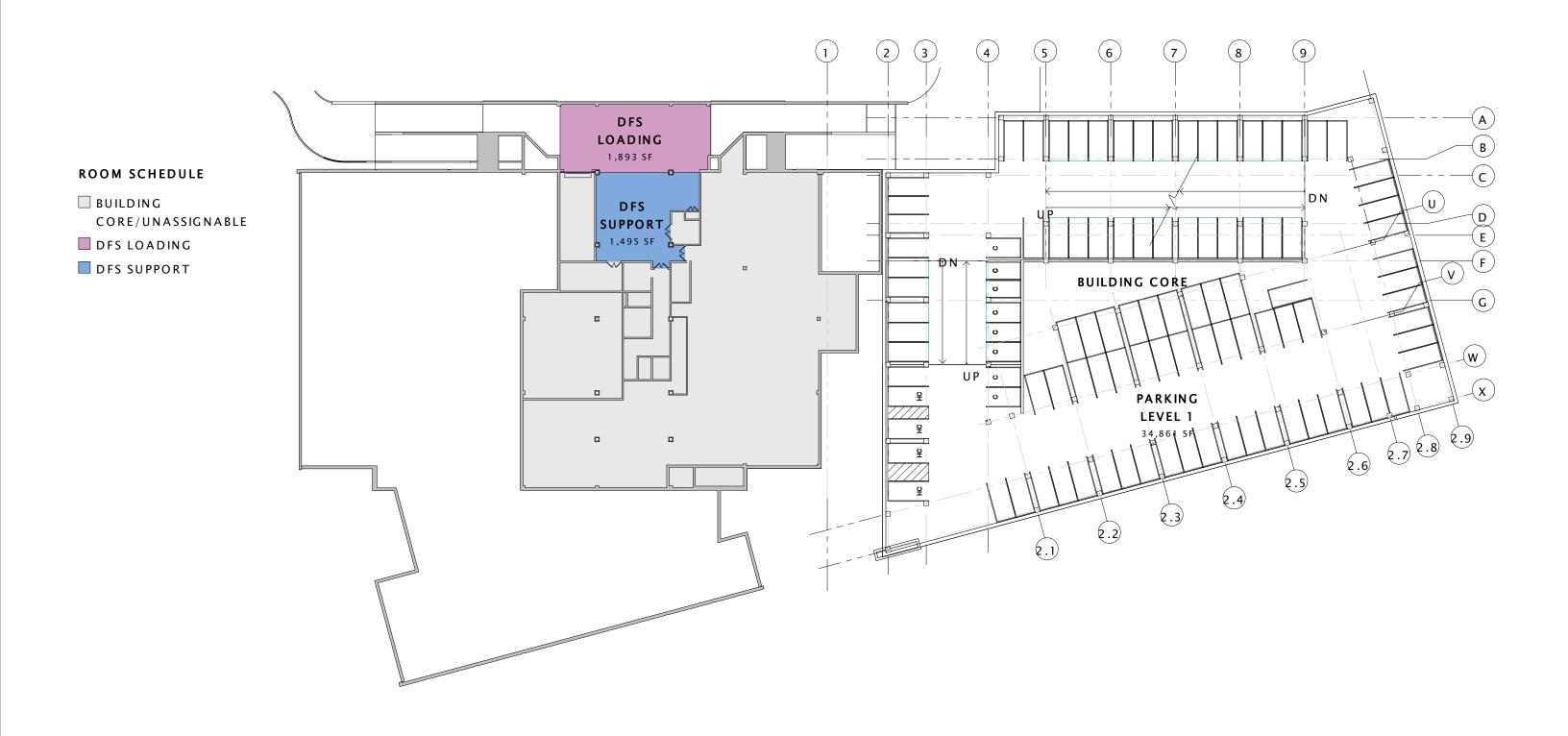
**JUNE 7, 2013** 



Department of Forensic Science **CENTRAL FORENSIC LAB** 

SITE PLAN

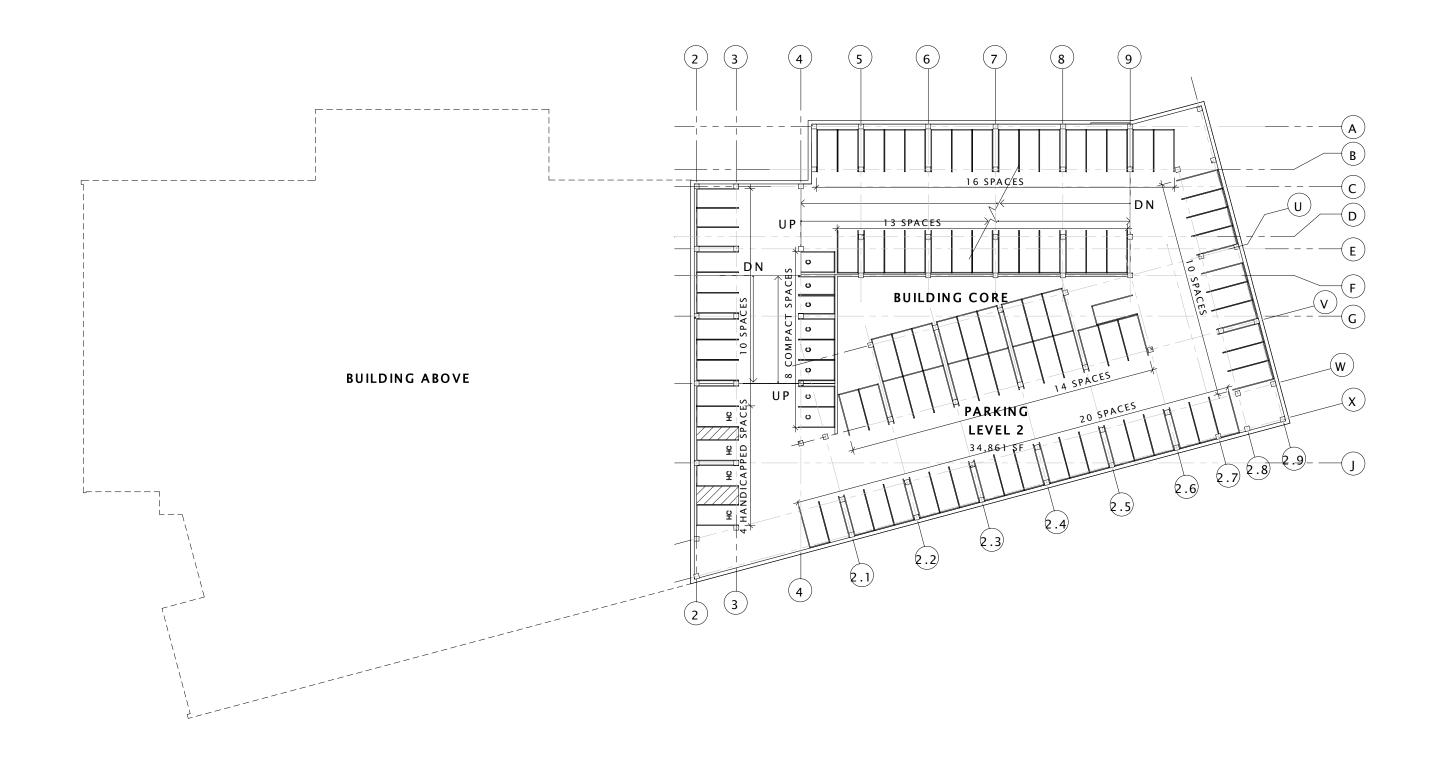
Commonwealth



Department of Forensic Science CENTRAL FORENSIC LAB

PARKING LEVEL P1 & BASEMENT

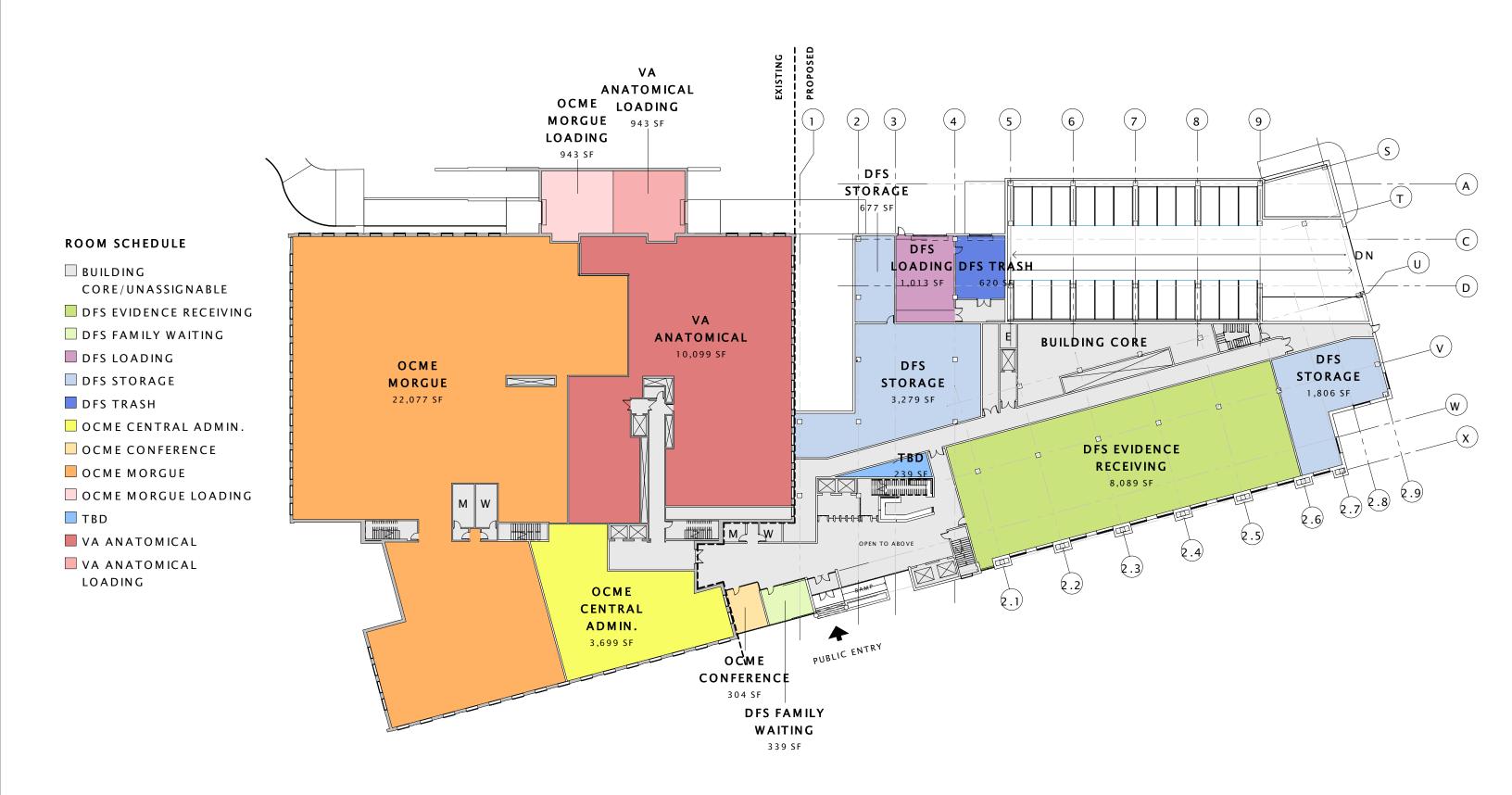






PARKING LEVELS P2 & P3

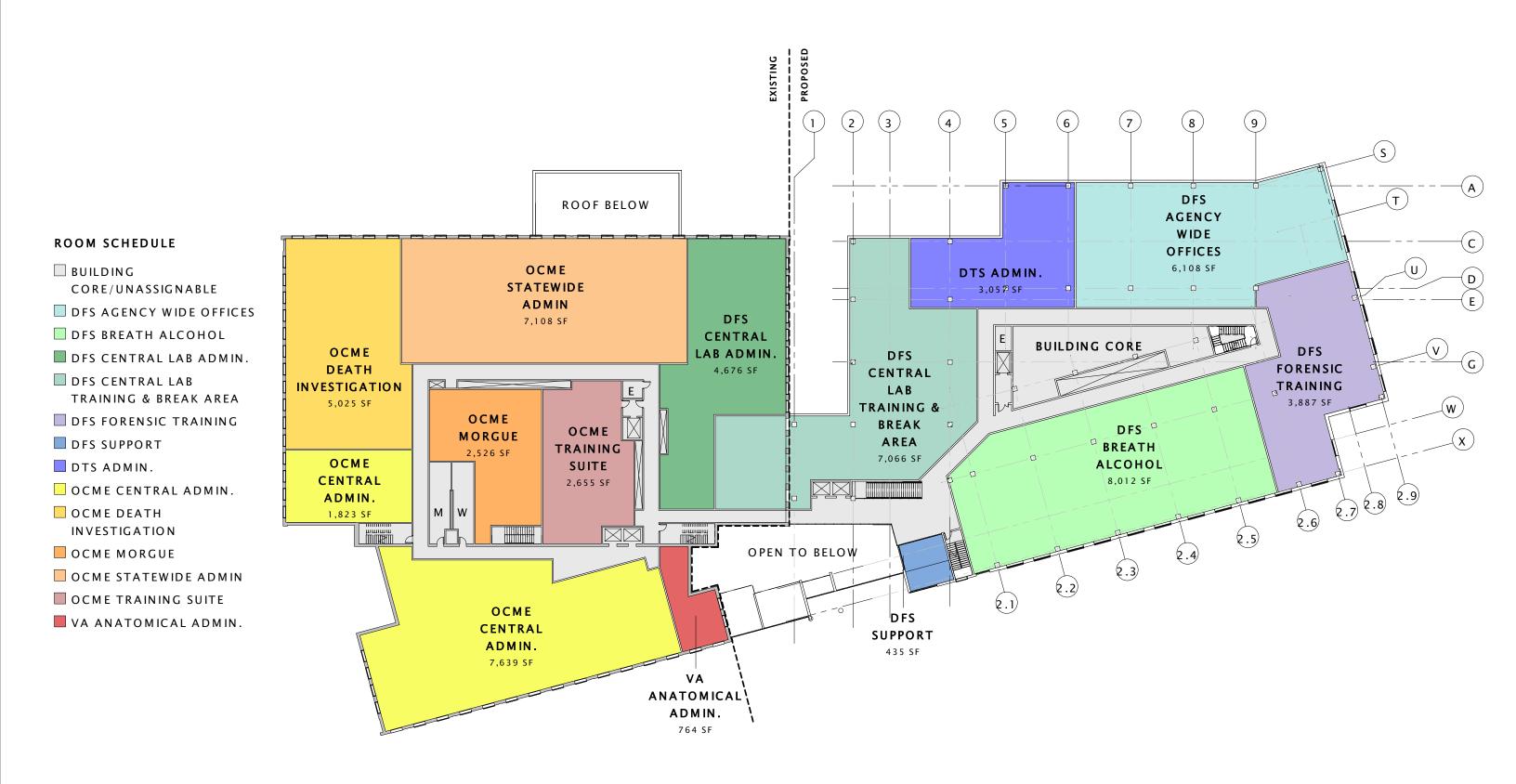




## Department of Forensic Science **CENTRAL FORENSIC LAB**

FIRST FLOOR PLAN

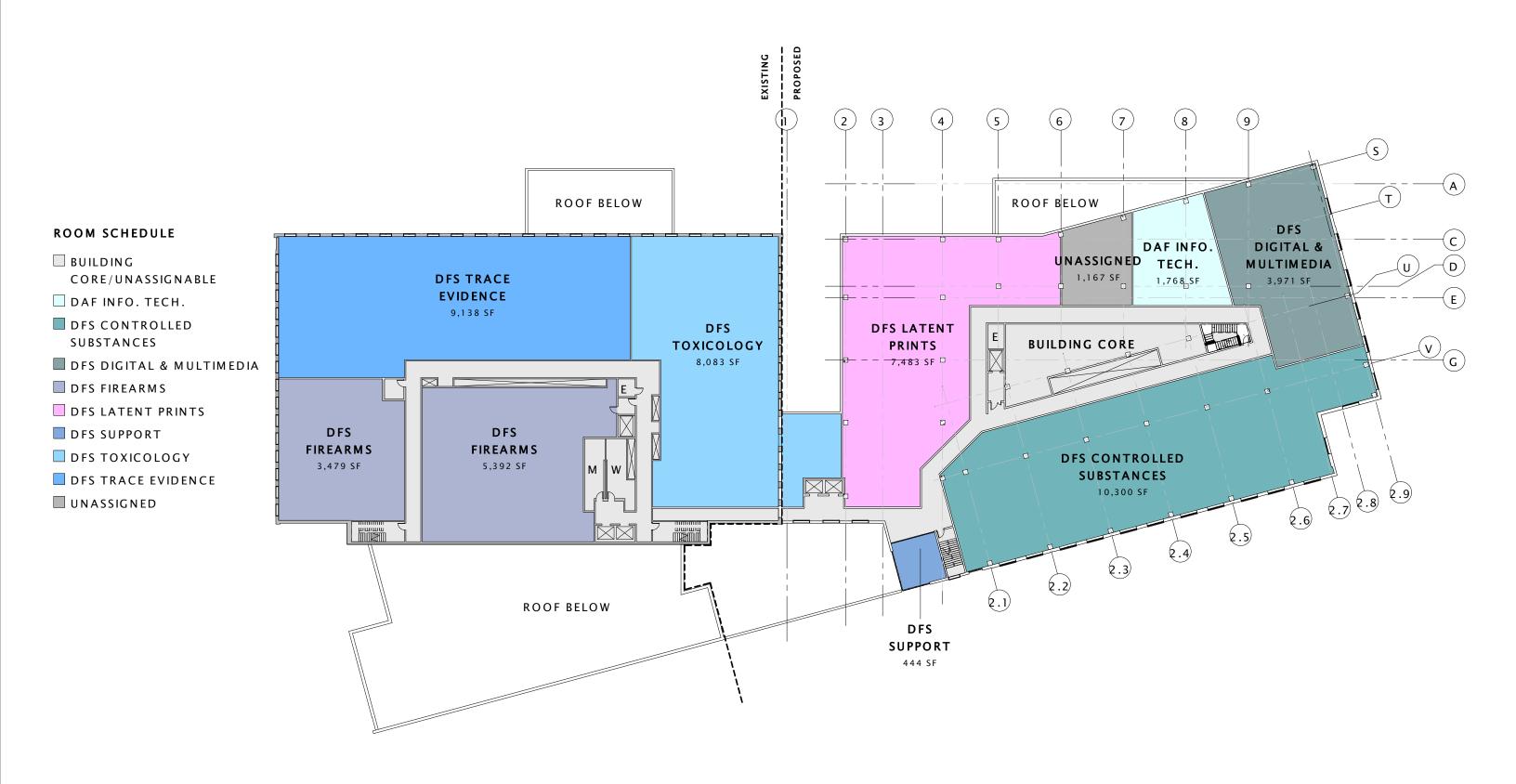






SECOND FLOOR PLAN







THIRD FLOOR PLAN

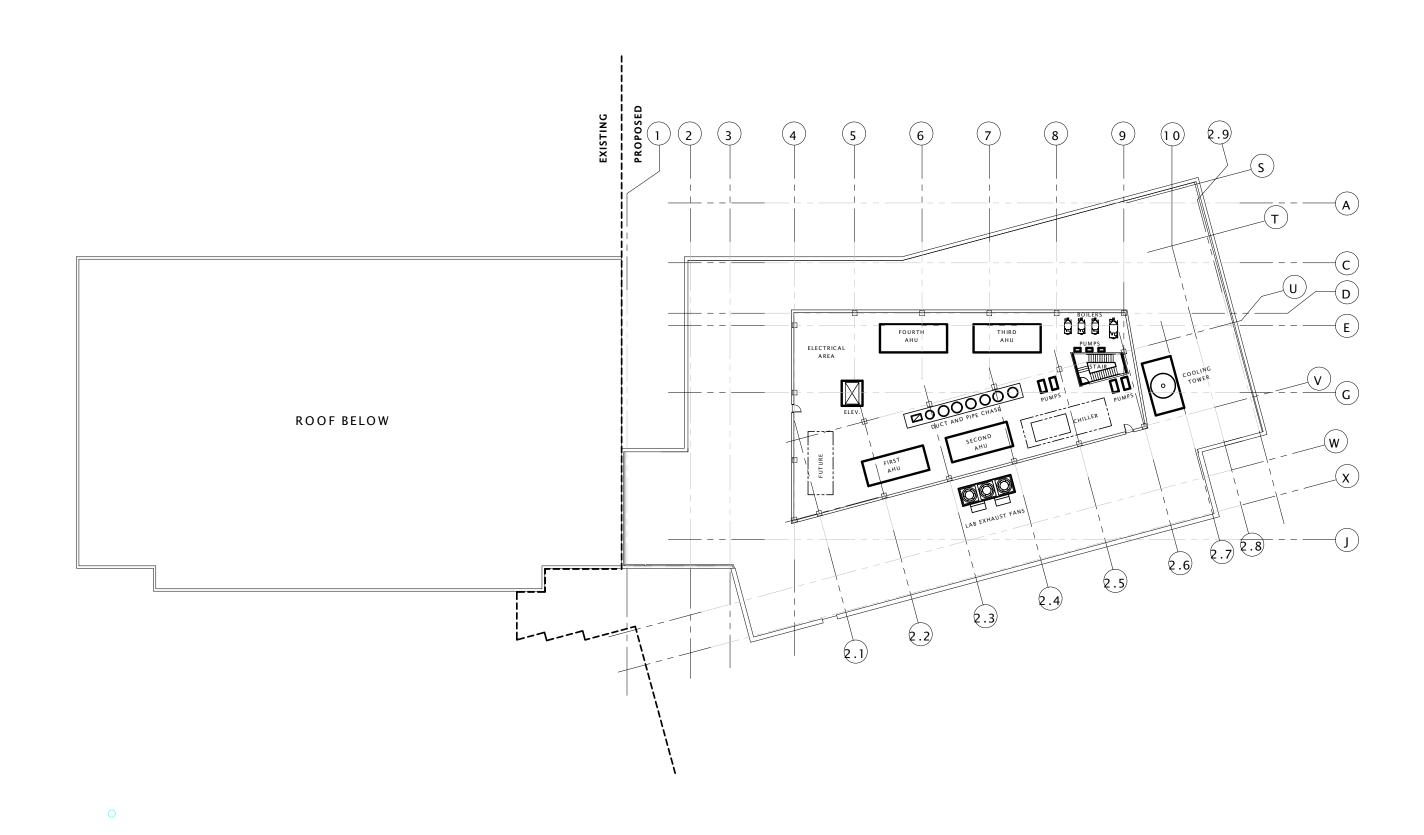




Department of Forensic Science **CENTRAL FORENSIC LAB** 

FOURTH FLOOR PLAN

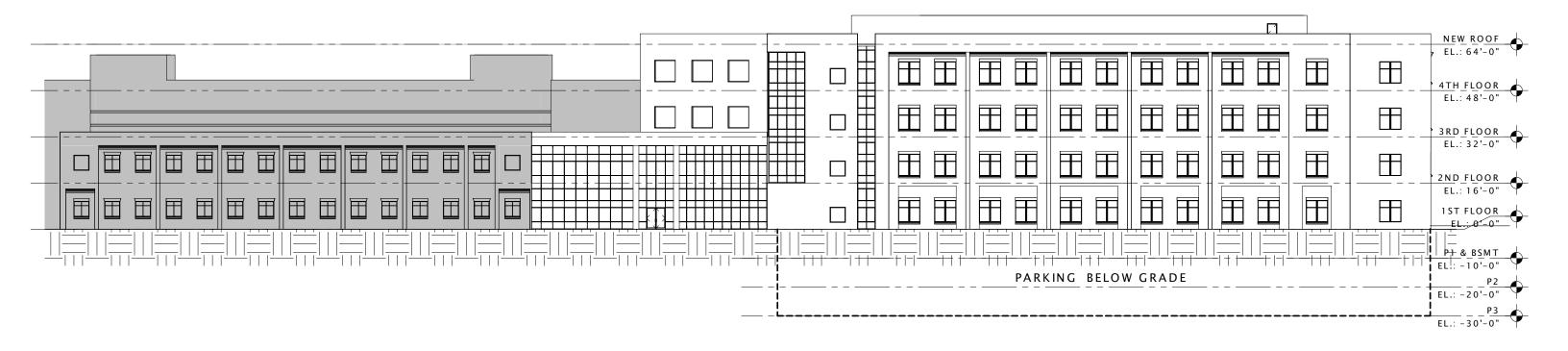






PENTHOUSE PLAN

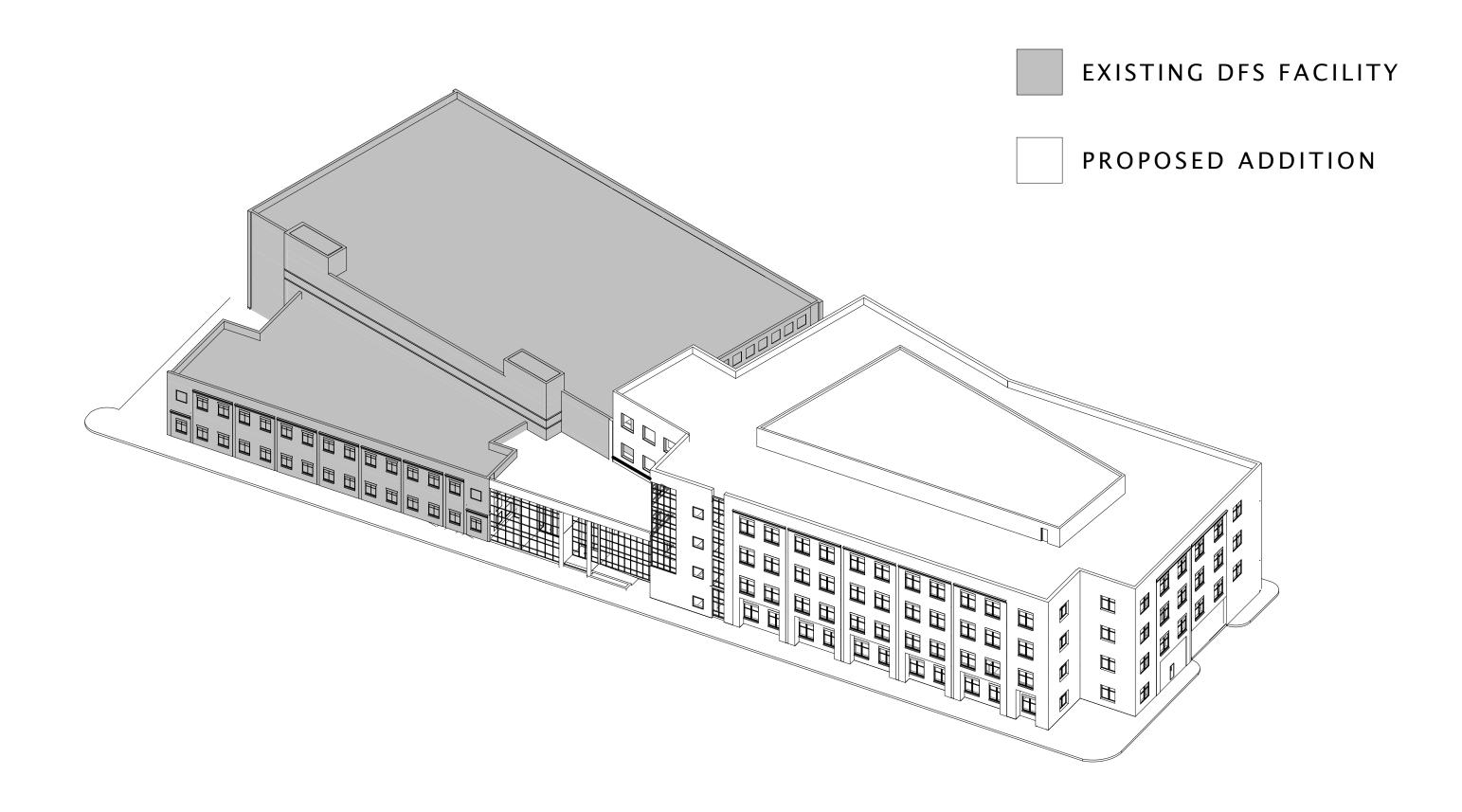






FIFTH ST. ELEVATION





Department of Forensic Science **CENTRAL FORENSIC LAB** 

FIFTH ST. AXONOMETRIC



ADDENDICES SECTION 5	
APPENDICES – Section 5	
DEPARTMENT OF FORENSIC SCIENCE  DETAILED STATISTICAL SPACE REQUIREMENTS	

June 7, 2013

#### STATISTICAL DEPARTMENTAL SUMMARY SHEET

Division or Work Group Name:	"current" Central VA Staff	•	2026 Central VA Staff	A <b>Lab</b> Area (ASF)	INDEX	
Department of Forensic Science						
DFS - Agency Wide Administrative Offices	20	5,440	25	6,061	pg. 2	
Forensic Laboratory (FL) Administration	6	3,296	8	4,587	pg. 3	
FL-Firearms/Tool Marks Section	12	7,066	16	8,813	pg. 4	
FL-Forensic Biology/DNA Section	23	13,094	29	15,064	pg. 5	
FL-Toxicology	13	5,699	16	7,929	pg. 6	
FL-Latent Prints	11	6,156	13	7,474	pg. 7	
FL-Trace Evidence	6	8,781	7	9,129	pg. 8	
FL-Controlled Substances Section	14	5,801	21	10,374	pg. 9	
FL-Evidence Receiving	7	6,103	9	7,989	pg. 10	
FL-Digital & Multimedia	4	2,356	7	3,966	pg. 11	
Div of Tech Services (DTS) - Administration	9	2,183	11	2,988	pg. 12	
DTS-DNA Data Bank Section	8	7,214	10	8,978	pg. 13	
DTS-Mitochondrial DNA Section	3	2,434	6	3,520	pg. 14	
DTS-Forensic Training Section	3	3,715	4	3,917	pg. 15	
DTS-Breath Alcohol Section	9	8,020	10	8,043	pg. 16	
DAF-Info Tech Staff	4	1,945	5	1,766	pg. 17	
DFS-Public Areas & Facility Support	3	18,200	4	27,815	pg. 18	
Department of Forensic Science Total	155	107,502	201	138,413		
Total Offices/Labs, Staff & Area Required	155	107,502	201	138,413		

NOTES:

Department of Forensic Science - Central Virginia Facility
STATISTICAL SPACE REQUIREMENTS

**Division or Work Group:** 

**DFS - Agency Wide Administrative Offices** 

Contact:

				•	current"			2026	
	Sta	ndard		ntral V	A Lab			/A Lab	REMARKS:
	Space	Size	Rm.	Staff	Area	Rm. S	Staff	Area	
Office Space & Staff	Туре	(SF-Std)	_Qty		(SF)	<u>Qty</u>		(SF)	
Director's Office									
Director	Office	196	1 1	1		l 1	1	196	
Chief Deputy Director	Office	120	l ;	1		1	1	120	
Deputy Director	Office	120		1			1	120	
Legal Counsel	Office	120		1			1	120	
Legal Assitant	Wkstn	80		1		'1	1	80	
Office Manager	Office	120		1			1	120	
	Wkstn		2	2			•	160	
Forensic Adminstrative Specialist		80	2	2		2	2		
Information Officer	Office	120				1	1	120	
Human Resources									
Unit Manager	Office	120	1	1		1	1	120	
HR Specialist	Office	120	2	2		3	3	360	
Administrative Support									
Purchasing Unit Manager	Office	120	1 1	1		1	1	120	
Admin Support	Wkstn	80	2	2		3	3	240	
Finance Unit Manager	Office	120	l -	1			1	120	
Admin Support	Wkstn	80	3	3		4	4	320	
Planning & Budget Unit Manager	Office	120	1	1		1 7	1	120	
Admin Support	Wkstn	80	'	'			1	80	
Admin Support	VVKSIII	00				'	1	00	
Subtotal OFFICE SPACE & STAFF			20	20		25	25	2,636	
SUPPORT SPACE & EQUIPMENT			20	20		25	25	2,030	
DFS Waiting			0		130	1		130	
Mail/Copy/Work			1		145	1		151	
Records Storage			2	?		1		120	
Conference			l 1		325	l 1		338	
Administrative Storage			1 1	?		l 1		120	
Work Area - HR			1	-	200	1		217	
Library				?		· '		217	
Break Room			1	•	95	1 1		95	
Facility Plan Room			'		93			225	
racinty rian room						'		225	
Subtotal SUPPORT					1,040	,		1,544	
Corridors & Bldg. Layout Factor				_	0		=	695	
Assignable Required in Square Feet					1,040		_	2,239	
055-100-100-100-100-100-100-100-100-100-					F 440			0.001	-
Office & Support Assignable Total					5,440			6,061	
			·			·			l

NOTES:

Adjacency Requirements: Special Requirements: **Additional Remarks:** 

It is desireable to co-located the administrative functions noted herein near the Central Laboratory Facilities of the DFS

Adminstrative Functions that support Virginia Department of Forensic Science Statewide. Include "Office of the Director", Admin Offices of

June 7, 2013

DFS Summary Page 1

June 7, 2013

Department of Forensic Science - Central Virginia Facility STATISTICAL SPACE REQUIREMENTS

June 7, 2013

Division or Work Group:

Forensic Laboratory (FL) Administration

Contact:

Office Space & Staff	<b>Sta</b> l Space Type	ndard Size (SF-Std)	Cer Rm. S Qty	ntral VA	current" A Lab Area (SF)	Cer Rm. S Qty		<b>2026</b> <b>/A Lab</b> Area (SF)	REMARKS:
OFFICE Director Office Manager	Office Office	196 120	1	1 1		1 1	1	196 120	
Admin Administrative Specialists	Wkstn Wkstn Wkstn	100 64 80	1 0 3	1 0 3		1 0 5	1 0 5	100 0 400	
Subtotal OFFICE SPACE & STAFF Corridors & Bldg. Layout Factor Assignable Required in Square Feet			6	6	1,020	8	8	816 350 1,166	
SUPPORT SPACE & EQUIPMENT DFS Waiting Mail/Copy/Work			1 1		260 54	1		260 120	provide access without passing through admin area; mail in pass- through horizontal cubby holes
Lab Records Storage Conference Administrative Storage Server Room			2 3		699 36	1 3 1		0 1,000 36	noted with IT
Case File Room Work Area Library Break Room			1 1 1		594 184 152	1 1 1		594 184 152	
Stock Room  Subtotal SUPPORT Corridors & Bldg. Layout Factor Assignable Required in Square Feet			1	?	1,979 297 2,276	1		2,566 856 3,422	
Office & Support Assignable Total					3,296			4,587	

NOTES:

**Adjacency Requirements:** NOVA - Adjacent to public entry and Evidence Control (Evidence staff share responsibilities w/ admin staff)

**Special Requirements:** coat storage

**Additional Remarks:** 

FL-Firearms/Tool Marks Section Division or Work Group: Contact:

Office Space & Staff	<b>Sta</b> Space Type	ndard Size (SF-Std)	Ce Rm. : Qty	ntral V	current" A Lab Area (SF)	Ce Rm. 3 Qty		<b>2026</b> /A Lab Area (SF)	REMARKS:
OFFICE Supervisor's Office Technicians & Examiners Waiting File Library/Work Area	Office Wkstn	120 64	2 10	2 10		2 14 1 1 1	2 14	240 896 32 32 64	
Subtotal OFFICE SPACE & STAFF Corridors & Bldg. Layout Factor Assignable Required in Square Feet			12	12	1,800	19	16 =	1,264 518 1,782	
SUPPORT SPACE & EQUIPMENT Lab Vestibule			2		155	2		155	
In-Process Evidence Storage Firearms and Tools Marks Main Lab NIBIN Lab Gun Reference/Ammo Storage Room			1 1 1 1		206 2,729 125 418	1 1 1 1		227 3,302 250 575	add 10% growth add 20% growth add 10% growth
SNR/GSR Examination Room Work Room / Shop Water Tank Live Ammo Storage			1 1 1 1	?	446	1		669	add 10% growth
Subtotal SUPPORT Corridors & Bldg. Layout Factor Total Usable Area Required in Square F	eet			_	5,015 251 5,266		_	6,114 917 7,031	
Office & Support Assignable Total					7,066			8,813	

NOTES:

Adjacency Requirements: Special Requirements:

**Additional Remarks:** 

**CFL Administration** Page 3

June 7, 2013

Department of Forensic Science - Central Virginia Facility

**FL-Toxicology** 

Standard

STATISTICAL SPACE REQUIREMENTS

Division or Work Group:

Contact:

June 7, 2013

Division or Work Group:

**FL-Forensic Biology/DNA Section** 

Contact:

					current"			2026	
	Sta	ndard	Ce	ntral V		Ce	ntral V	/A Lab	REMARKS:
	Space	Size	Rm.	Staff	Area	Rm.	Staff	Area	
Office Space & Staff	Type	(SF-Std)	Qty		(SF)	Qty		(SF)	
					_				
<u>OFFICE</u>									
Supervisor	Office	120	3	3		3	3	360	
Technicians & Examiners	Wkstn	64	20	20		26	26	1,664	Include Familial, Codis, and Research Personnel
Waiting		32				1		32	
Conference		232				1		232	
Files		32				1		32	
Library/Work Area		Varies				1		32	
Subtotal OFFICE SPACE & STAFF			23	23		33	29	2,352	
Corridors & Bldg. Layout Factor							_	952	
Assignable Required in Square Feet					2,401			3,304	
SUPPORT SPACE & EQUIPMENT									
Lab Vestibule			1		89	1		89	
Lab Vestibule			1		89	1		89	
In-Process Evidence Storage			1		138	1		276	double in size
Drying Room / Cabinets			1		142	1		178	25% growth
Screening Room / Exam			1	?					
Screening/ALS/Luminol Room			2		388	3		585	
Extraction / Main Lab			1		5,290	1		5,290	
Reagent Prep Lab			1		825	1		825	
Pre-Amp #1			1		156	1		172	10% growth
Pre-Amp #2						2		274	
PCR Gowning/Degowning Vestibule			1		68	1		68	
PCR Amp/Post Amp Lab			3		816	1		1,020	25% growth
Supply Area			1		113	1		113	
Manual Amplification			1	?					
Research Laboratory			1		252	1		315	25% growth
CODIS Lab			1		351	1		351	
Forensic Bio Room					90	;		90	
Totolisio Bio Room			'		00	'		00	
Subtotal SUPPORT			-		9,298	-		10,226	
Corridors & Bldg. Layout Factor					1,395			1,534	
Assignable Required in Square Feet					10,693		=	11,759	
7.001ghlabio 1.0quilleu ili Oquale i eet					10,000			11,700	
Office & Support Assignable Total					13,094			15,064	
									l

NOTES:

**Adjacency Requirements:** 

Special Requirements:

**Additional Remarks:** 

Office Space & Staff	Space Type	Size (SF-Std)	Rm. S Qty	Staff	Area (SF)	Rm. S Qty	Staff	Area (SF)	
Onice opace a stan	Турс	(OI -Ota)	Gty		(01)	<u> </u>		(01)	
OFFICE									
Supervisor	Office	120	2	2		2	2	240	
Toxicologist, Examiners, etc	Wkstn	64	11	11		14	14	896	To Account for M-Z, Bullcomings, Williams Challenges
Waiting						1		32	
Work Area						1		32	
Library						1		133	
File Storage						1		32	
Subtotal OFFICE SPACE & STAFF			13	13		20	16	1,365	
			13	13		20	10	•	
Corridors & Bldg. Layout Factor				_	4.400		_	566	
Assignable Required in Square Feet					1,466			1,931	
SUPPORT SPACE & EQUIPMENT - L	.aboratorv								
Laboratory Vestibule			1		100	1		100	
In-Process Evidence / Accessioning									
Main Toxicology Lab / Bio Prep			1		3,057	1		3,516	growth 15%
Instrument Area			1		819	1		1,600	growth 50%
Cylinder Room			1		40				prefer centralized distribution at loading dock

4,016

217

4,233

5,699

2026

5,216

782 5,998

7,929

Central VA Lab

REMARKS:

"current"

Central VA Lab

NOTES:

Subtotal SUPPORT

Corridors & Bldg. Layout Factor Assignable Required in Square Feet

> Adjacency Requirements: Special Requirements: **Additional Remarks:**

Office & Support Assignable Total

CFL-Forensic BiologyDNA Section Page 5 June 7, 2013

Department of Forensic Science - Central Virginia Facility STATISTICAL SPACE REQUIREMENTS

June 7, 2013

Division or Work Group:

**FL-Latent Prints** 

Contact:

				'current"			2026	
	ndard			'A Lab			/A Lab	REMARKS:
Space Space Space	Size	Rm. S	staff	Area	Rm. S	Staff	Area	
Office Space & Staff Type	(SF-Std)	Qty		(SF)	Qty		(SF)	
OFFICE								
Supervisor Office	120	2	2		2	2	240	
Examiners & Technicians Wkstn	80	6	6		8	8	640	
Photographer Wkstn	80	3	3		3	3	240	
AFIS Room					1		160	
Reference Library					1		223	with waiting
Waiting/Work Area					1		80	
Files							32	
Copy/Fax Area							32	
Subtotal OFFICE SPACE & STAFF	_	11	11	_	16	13	1,647	
Corridors & Bldg. Layout Factor							667	
Assignable Required in Square Feet				1,165		_	2,314	
SUPPORT SPACE & EQUIPMENT - Laboratory		_						
Laboratory Vestibule		2		160	2		160	
In-Process Evidence Storage Room		1		132	1		264	double current size
Latent Prints Laboratory		1		1,089	1		1,800	65% growth
Processing Room		1		157	1		314	
Impressions Lab		1		241	1		301	25% growth
ALS Room 2					1		224	
ALS Room 3		,		0.000	_		4 000	
Studio/Digital Imaging/ Finishing		1		2,326	1		1,200	
Chemical Storage								
Equipment Storage		_		200				
Library		1		208				
Subtotal SUPPORT				4,537			4,487	
Corridors & Bldg. Layout Factor				454			673	
Assignable Required in Square Feet			_	4,991		=	5,160	
7 Golgitable Required in Oquale 1 Get				7,001			3, 100	
Corridors & Bldg. Layout Factor				6,156			7,474	

NOTES: Adjacency Requirements:

Special Requirements:

**Additional Remarks:** 

**FL-Trace Evidence** Division or Work Group:

Contact:

Office Space & Staff	<b>Sta</b> r Space Type	ndard Size (SF-Std)	Cer Rm. S Qty	ntral V	"current" /A Lab Area (SF)	Ce Rm. S Qty		<b>2026</b> <b>/A Lab</b> Area (SF)	REMARKS:
OFFICE Supervisor Examiners & Technicians Work Room/Library Waiting Area Files	Office Wkstn	120 64	2 4 1 1 1	2 4		2 5 1 1	2 5	240 320 32 32	
Subtotal OFFICE SPACE & STAFF Corridors & Bldg. Layout Factor Assignable Required in Square Feet			9	6	1,000	9	7	624 254 878	
SUPPORT SPACE & EQUIPMENT - L Lab Vestibule In-Process Evidence Storage Main Trace Evidence Lab Scraping Room 1 Scraping Room 2 Scraping Room 3	<u>aboratory</u>		2 1 1 1 1		215 228 2,334 325 325	2 1 1 1 1		215 228 2,334 325 325	
Exam Room/Fire Debris Microscope Lab Instrument Area Cylinder Room Regional SEM Room Standards & Dry Storage			1 1 1 1		665 1,234 30 672 212	1 1 1		665 1,234 672 212	prefer centralized near loading dock 10% growth
Subtotal SUPPORT Corridors & Bldg. Layout Factor Total Usable Area Required in Square	Feet			=	7,205 576 7,781		=	7,175 1,076 8,251	
Office & Support Assignable Total					8,781			9,129	

NOTES:

Adjacency Requirements: Special Requirements:

**Additional Remarks:** 

**CFL-Latent Prints** Page 7 Department of Forensic Science - Central Virginia Facility

June 7, 2013

**Department of Forensic Science - Central Virginia Facility** 

STATISTICAL SPACE REQUIREMENTS

June 7, 2013

STATISTICAL SPACE REQUIREMENTS

Division or Work Group:

**FL-Controlled Substances Section** 

Contact:

	Sta	ndard		entral \	"current" /A Lab			2026 ⁄A Lab	REMARKS:
	Space	Size	Rm.	Staff	Area	Rm.	Staff	Area	
Office Space & Staff	Туре	(SF-Std)	Qty		(SF)	Qty		(SF)	
OFFICE									
Supervisor	Office	120	3	3		3	3	360	
Examiners & Technicians	Wkstn	64	11	11		18	18	1,152	
Work Room/Library			0			1		456	
Waiting Area			0			1		32	
Files			0			1		32	
Subtotal OFFICE SPACE & STAFF			14	14		24	21	2,032	
Corridors & Bldg. Layout Factor								852	
Assignable Required in Square Feet					1,330			2,884	
					,			·	
SUPPORT SPACE & EQUIPMENT - La	horatory								
Lab Vesibule	<u>iboratory</u>		1		69	1		69	
In-Process Evidence Storage					52			200	triple in size
Main Lab			'		3,159			4,730	enlarge lab stations to 'U' shape
Instrument Area					791	1		1,200	10% - 20% growth
Cylinder Room			1		35			,,	prefer centralized area adjacent to loading dock
Reagent Prep									, ,
Standards Room			1		140	1		154	10% growth
Process Room						1		160	
Subtotal SUPPORT					4,246			6,513	
Corridors & Bldg. Layout Factor				_	225		_	977	
Assignable Required in Square Feet					4,471			7,490	
Office & Support Assignable Total					5,801			10,374	
			l						

**Adjacency Requirements:** 

**Special Requirements: Additional Remarks:** 

NOTES:

Contact:

FL-Evidence Receiving Division or Work Group:

"current" 2026 Central VA Lab Central VA Lab Standard Rm. Staff Area Rm. Staff Area Space Size Office Space & Staff Type (SF-Std) Qty (SF) Qty (SF) **OFFICE** Office Supervisor 120 120 Technicians Wkstn 64 6 6 512

Subtotal OFFICE SPACE & STAFF 632 Corridors & Bldg. Layout Factor 350 982 Assignable Required in Square Feet 913 **SUPPORT SPACE & EQUIPMENT** Evidence Receiving Center 454 454 Evidence Entry 40 Storage 80 Evidence Re-Wrap Evidence Viewing (Consultation Room) 320 320 Evidence Storage 1,940 2,450 Haz Lab Security Desk

232 57 232 57 4,943 247 5,190

6,093 914 7,007 6,103 7,989

double size

Includes approx 450sf of long term storage area

**REMARKS:** 

NOTES:

Toilet

Subtotal SUPPORT

Corridors & Bldg. Layout Factor

Assignable Required in Square Feet

Office & Support Assignable Total

**Adjacency Requirements:** 

**Special Requirements:** 

**Additional Remarks:** 

CFL-Controlled Substances Sec Page 9

June 7, 2013

Division or Work Group: Contact:

#### FL-Digital & Multimedia

Office Space & Staff	<b>Sta</b> Space Type	ndard Size (SF-Std)	Ce Rm. Qty	entral V	'current" 'A Lab Area (SF)	Ce Rm. S Qty		<b>2026</b> /A Lab Area (SF)	REMARKS:
OFFICE Supervisor Examiners & Technicians Waiting File Library/Work Area/Copy	Office Wkstn	120 80	1 3 0 0	1 3		1 6 1 1	1 6	120 480 32 32 64	
Subtotal OFFICE SPACE & STAFF Corridors & Bldg. Layout Factor Assignable Required in Square Feet			5	4 =	0 0 584	10	7 =	728 305 1,033	
SUPPORT SPACE & EQUIPMENT - L Lab Vestibule In-Process Evidence Storage Video Analysis Audio Analysis Computer Analysis - Main Lab Cell Phone room Server Room	<u>aboratory</u>		1 1 1 1 1	?		1 1 1 1 1 1		80 80 360 200 1,411 300 120	double size 30% growth double size Specific to Digital & Multimedia equipment
Subtotal SUPPORT Corridors & Bldg. Layout Factor Assignable Required in Square Feet				<u>=</u>	1,688 84 1,772		_	2,551 383 2,933	

2,356

3,966

NOTES:

Adjacency Requirements: Special Requirements: Additional Remarks:

Office & Support Assignable Total

Department of Forensic Science - Central Virginia Facility
STATISTICAL SPACE REQUIREMENTS

June 7, 2013

Division or Work Group:

Div of Tech Services (DTS) - Administration

Contact:

	Star	ndard	l Cei	" ntral V	current" A I ah	l Ce	ntral \	2026 /A Lab	REMARKS:
	Space	Size	Rm. S		Area	Rm. S		Area	NEMAKKO.
Office Space & Staff	Туре	(SF-Std)	Qty		(SF)	Qty		(SF)	
<u>OFFICE</u>									
Director	Office	196	1 1	1		1 1	1	196	
Program Manager/QAC	Office	120	5 3	5		5	5	600	
Admin	Wkstn	100	3	3		5	5	500	Support to DTS Management
Subtotal OFFICE SPACE & STAFF			9	9		11	11	1,296	
Corridors & Bldg. Layout Factor								555	
Assignable Required in Square Feet					1,382			1,851	
SUPPORT SPACE & EQUIPMENT									
DFS Waiting			1		50	1		50	
Conference Room			1		249	2		400	
Administrative Storage			1	?		1		100	
Library			1		194	1		194	
Copy/Fax/Scan			1		108	1		108	
Subtotal SUPPORT			l ——		601			852	
Corridors & Bldg. Layout Factor					200			284	
Office & Support Assignable Total		_			2,183			2,988	
-			<u> </u>			<u> </u>			

#### NOTES:

Adjacency Requirements: Special Requirements:

It is a requirement to co-located the functions noted herein within the Central Laboratory Facility

**Additional Remarks:** 

CFL-Digital & Multimedia Page 11

June 7, 2013

Division or Work Group:

#### **DTS-DNA Data Bank Section**

Contact:									
					"current"			2026	
	Sta	ndard	Ce	ntral \	/A Lab	Cei	ntral V	'A Lab	REMARKS:
	Space	Size	Rm. S	Staff	Area	Rm. S	Staff	Area	
Office Space & Staff	Туре	(SF-Std)	Qty		(SF)	Qty		(SF)	
OFFICE									
Supervisor	Office	120	3	3		2	2	240	
Examiners & Technicians	Wkstn	64	5	5		8	8	512	
Waiting						1		32	
Conference						1		232	
Files						1		120	currently with 10 cabinets
Library/Work Area						1		32	
·									
Cubtotal OFFICE CDACE & CTAFE			l	0			10	1.100	
Subtotal OFFICE SPACE & STAFF			8	8		14	10	1,168	
Corridors & Bldg. Layout Factor				_			_	490	
Assignable Required in Square Feet					1,425			1,658	

SUPPORT SPACE & EQUIPMENT - Laboratory					
Accessioning Area	1	277	1	277	
Lab Vesibule	1	79	1	79	
Lab Vestibule	1	95	1	105	
In-Process Evidence Storage	1	128	2	150	
Pre-Amp	1	137	1	137	
PCR Gowning/Degowning Vestibule	1	71	1	142	
Supply Area	1	177	1	177	
DNA Database Lab	1	557	1	692	25% growth
DNA Data bank binder & sample storage combined	2	689	1	4,000	If High Density shelves used, space may be reduced
DNA Data bank sample storage (separate room current)	1	376			combine with binders in one area
DNA Data bank supplies	1	540			relocate to "Central Building Storage" near a loading dock
DNA Data bank sample kit storage	1	1,216			relocate to "Central Building Storage" near a loading dock
Subtotal SUPPORT		4,948		6,365	

841

7,214

NOTES:

Adjacency Requirements: Special Requirements:

Additional Remarks:

Corridors & Bldg. Layout Factor

Assignable Required in Square Feet

Office & Support Assignable Total

Currently Data Bank & Case Work share lab space, pre-amp, post-amp & office space. Future Separation desired.

955 7,320

8,978

Department of Forensic Science - Central Virginia Facility
STATISTICAL SPACE REQUIREMENTS

June 7, 2013

Division or Work Group: Contact:

		"current"				2026		
Standard Central			A Lab			/A Lab	REMARKS:	
Space	Size	Rm. S	Staff	Area	Rm. S	Staff	Area	
Туре	(SF-Std)	Qty		(SF)	Qty		(SF)	
Office	120	1	1		1	1	120	
Wkstn	64	2	2		5	5	320	
					1		32	
					1		32	
		1			1		64	
		4	3		9	6		
			_			_		
				463			806	
horatory								
iborator y		1		89	1		89	
					1			
								Assumes old and new lab combined
					1			Assumes out and new lab combined
			?	210	1			
			•	203	1			
		Ö		0	1		45	
				1,729			2,360	
				242				
				1,971			2,714	
		-		2,434			3,520	
	Space Type Office	Space Size Type (SF-Std)  Office 120 Wkstn 64	Space Type         Size (SF-Std)         Rm. Size Qty           Office 120 Wkstn 64         1           4         1           4         1           4         1           1         <	Standard   Space   Size   Type   (SF-Std)				

#### NOTES:

Adjacency Requirements: Special Requirements: Additional Remarks:

DTS-DNA Data Bank Page 13

June 7, 2013

**Division or Work Group:** Contact:

#### **DTS-Forensic Training Section**

				•	'current"			2026	
	Sta	ndard	Cer	ntral V	/A Lab	Cei	ntral V	/A Lab	REMARKS:
	Space	Size	Rm. S	Staff	Area	Rm. S	Staff	Area	
Office Space & Staff	Туре	(SF-Std)	Qty		(SF)	Qty		(SF)	
OFFICE									
OFFICE	Office	100	4	4		1	4	120	
Supervisor Examiners & Technicians	Wkstn	120 64	1	1		1 2	1 2	120	
Admininistrative Specialist	Wkstn	80	1	1		1	1	80	
Waiting	VVKSIII	80	1	ı			1	32	
Files			1					132	
Library/Work Area			1					120	
Library/Work Area			'			· '		120	
Subtotal OFFICE SPACE & STAFF			6	3		7	4	612	
Corridors & Bldg. Layout Factor								257	
Assignable Required in Square Feet				_	667		_	869	
SUPPORT SPACE & EQUIPMENT - L	<u>aboratory</u>								
Break Out			1		155	1		155	
Training Area			1		480	1		480	
Classroom #2			1		1,030	1		1,030	
Chair/Huddle			1		168	1		168	
Break Room						l ,			Listed with Breath Alcohol Sectiion but shared space
Files			1		60	1		60	
Subtotal SUPPORT			-		2,193	-		2,193	
Corridors & Bldg. Layout Factor					855			855	
Assignable Required in Square Feet				_	3,048		_	3,048	
, 100.9. 10010 . 104um 00 m. 04um 0 .					0,0.0			0,0.0	
Office & Support Assignable Total					3,715			3,917	

NOTES:

Adjacency Requirements: Special Requirements: Additional Remarks:

Department of Forensic Science - Central Virginia Facility
STATISTICAL SPACE REQUIREMENTS

**Division or Work Group:** 

**DTS-Breath Alcohol Section** 

Contact:

	<b>Sta</b> i Space	n <b>dard</b> Size	"current" Central VA Lab Rm. Staff Area			Cei Rm. S		<b>2026</b> ' <b>A Lab</b> Area	REMARKS:
Office Space & Staff	Type	(SF-Std)	Qty	olan	Area (SF)	Qty	olali	(SF)	
<u>OFFICE</u>									
Supervisor	Office	120	1	1		1	1	120	
Examiners & Technicians	Wkstn	64	8	8		9	9	576	
Waiting						1		32	
Files						1		132	
Library/Work Area			1			1		120	
Subtotal OFFICE SPACE & STAFF			10	9		13	10	980	
Corridors & Bldg. Layout Factor			'	Ü				539	
Assignable Required in Square Feet				_	1,496		=	1,519	
7 looighabho 7 loquin ou in oquano 7 loot					1,100			1,010	
SUPPORT SPACE & EQUIPMENT - La	aboratory								
Lab Vesibule			1		70	1		70	
Training			1		1,008	1		1,008	
Classroom #1			1		812	1		812	
Storage			1		130	1		130	
Case / Records / File Room			1		450	1		450	
Instrument Training			1		700	1		700	
Mock Rooms			2		530	2		530	
Break Room			1		541	1		541	
Subtotal SUPPORT					4,396			4,396	
Corridors & Bldg. Layout Factor					2,128			2,128	
Assignable Required in Square Feet					6,524			6,524	
Office & Support Assignable Total					8,020			8,043	

June 7, 2013

NOTES:
Adjacency Requirements:
Special Requirements:
Additional Remarks:

DTS-Forensic Training Page 15

Division or Work Group:

**DAF-Info Tech Staff** 

Contact:

				•	'current"			2026	
	Sta	ndard	Ce	ntral V	'A Lab	Ce	Central VA Lab		REMARKS:
	Space	Size	Rm. S	Staff	Area	Rm. S	Staff	Area	
Office Space & Staff	Туре	(SF-Std)	Qty		(SF)	Qty		(SF)	
<u>OFFICE</u>									
Manager	Office	120	1	1		1	1	120	
Supervisor	Office	120	1	1		1	1	120	
Admin	Wkstn	100	2	2		3	3	300	
Subtotal OFFICE SPACE & STAFF			4	4		5	5	540	
Corridors & Bldg. Layout Factor							_	231	
Assignable Required in Square Feet					1,103			771	
SUPPORT SPACE & EQUIPMENT									
Work area for Computers			1		267	1		267	
Server Room			1		366	1		366	
Server Room - first floor			1		132	1		132	
Storage			1	?		1		100	
ctorage				•				100	
Subtotal SUPPORT			l ——		765			865	
Corridors & Bldg. Layout Factor					77			130	
Assignable Required in Square Feet				=	842		=	995	
Assignable Nequired III Oquale I eet					072			990	
			<u> </u>						
Office & Support Assignable Total					1,945			1,766	
Office & Support Assignable Total					1,343			1,700	
			·			l			

NOTES:

Adjacency Requirements: Special Requirements: **Additional Remarks:** 

It is a requirement to co-located the functions noted herein within the Central Laboratory Facility

Adminstrative Functions that support Virginia Department of Forensic Science Statewide. Include "Office of the Director", Admin Offices of

Department of Forensic Science - Central Virginia Facility
STATISTICAL SPACE REQUIREMENTS June 7, 2013

Division or Work Group:

**DFS-Public Areas & Facility Support** 

Contact:

June 7, 2013

	C4-		l con		"current"	l com	atual M	2026	DEMARKS.
	Standard Central VA Lab					'A Lab	REMARKS:		
	Space	Size	Rm. S	statt	Area	Rm. S	Staff	Area	
Office Space & Staff	Type	(SF-Std)	Qty		(SF)	Qty		(SF)	
OFFICE									
Manager	Office	120	1	1	120	1	1	120	
Staff	Wkstn	64	2	2	128	3	3	192	
Subtotal OFFICE SPACE & STAFF			3	3	248	4	4	312	
Corridors & Bldg. Layout Factor					124			156	
Total Usable Area Required in Square F	eet			_	372			468	
·									
SUPPORT SPACE & EQUIPMENT									
Kitchenette/Breakout			1		986	1		1,232	disposal at sink. Expand to accommodate staff increase
Coffee Area per floor			2		200	3		300	
Copy Rooms per floor			2		200	2		200	lab floors only
Building Lobby			1		964	1		964	,
Central Lab Storage			1		318	1		318	
DNA Data bank supplies			•		0.0	1		540	Adjacent to Loading Dock
DNA Data bank sample kit storage						1		1,216	Adjacent to Loading Dock
Biohazard Waste						•		.,	,, , , , , , , , , , , , , , , , , ,
Chemical Waste									
Chemical Storage			1		235	1		235	currently housed on 3rd floor, used by all labs
Flammable Chemical Storage			•						Listed with Latent Prints
Lab Gas Cylinder Holding						1		200	Listed with Individual Labs
Loading Dock/Receiving			1		1,980	1		2,500	Subject to expansion based on final shipping/delivery needs
Janitor's Closets			4		136	4		136	dubject to expansion based on final shipping/delivery freeds
Staff Toilets/Lockers			4		2,072	7		2,072	three in building, one at Biotech 8
Classrooms & Lab Training		726	2		2,919	2		5,000	three in ballang, one at bloteen o
Classroom storage		720	1		292	1		365	
Blood stain pattern training			' 1		453			453	includes lab and training conference
Old Mitochondrial Lab			1		430			400	lincludes lab and training conference
			1		700				
Unassigned Off Site Storage			'		700 ?	4		2.500	Currently housed Off-SiteOn Site prefered?
Off-Site Storage Prefunction Area		484			ſ	l l		2,500	Currently housed On-SiteOn Site prefered?
		404							
Storage AV									
Prep Space									
Subtotal SUPPORT			-		11,885			18,231	
Corridors & Bldg. Layout Factor								9,116	
				_	5,943		_		
Total Usable Area Required in Square F	-eet				17,828			27,347	
Office 9 Command Applicable Tel					40.000			07.045	
Office & Support Assignable Total					18,200			27,815	
						Ī			1

Adjacency Requirements: Special Requirements:

Central Chemical Storage should be in an explosive proof room.

**Additional Remarks:** NOTE: Kitchenette/Breakout included on this sheet is for **DFS/OCME Staff only**. Kitchenette/Breakout shown with DTS-Breath Alcholhol &

DAF-Info Tech Staff Page 1

APPENDICES	
Office of Chief Medical Examine	
DETAILED STATISTICAL SPACE REQUIREMENTS	

## Office of Chief Medical Examiner - Central Virginia Facility STATISTICAL SPACE REQUIREMENTS

June 7, 2013

#### STATISTICAL DEPARTMENTAL SUMMARY SHEET

	"current" Central VA F		2026 Central VA F	acility	INDEX
Division or Work Group Name:	Staff	Area (ASF)	Staff	Area (ASF)	
Office of the Chief Medical Examiner Statewide Adminstrative Offices Central Region Administration Death Investigators Morgue - Central Facility Virginia State Anatomical Program #REF! #REF! OCME Public Areas	13 18 7 5 6	3,938 4,931 1,213 9,562 3,315 na na	20 34 29 10 14	6,856 12,970 4,669 25,635 11,780 na na 3,909	pg. 2 pg. 3 pg. 4 pg. 5 pg. 6 pg. 7 pg. 8 pg. 9
Office of Chief Medical Examiner Totals	49	22,959	107	65,819	
Total Offices/Labs, Staff & Area Required	49	22,959	107	65,819	

NOTES:

## Office of Chief Medical Examiner - Central Virginia Facility STATISTICAL SPACE REQUIREMENTS

**Division or Work Group:** 

#### **Statewide Adminstrative Offices**

Contact:

		ndard	"current" Central VA Facility				2026 A Facility	REMARKS:	
Office Space & Staff	Space Type	Size (SF-Std)	Rm. 3 Qty	Staff	Area (SF)	Rm. Qty	Staff	Area (SF)	
Omec opace a stan	Турс	(OI -Ota)	<u></u>		(01)	<u> </u>		(01)	
OFFICE Chief Medical Examiner	Office	225	1	1	309	1	1	225	One of four current Forensic Pathologists - NOTE: Office
									Space includes area for microscope & consult area.
State Forensic Epidemiologist	Office	120	1	1	101	1	1	120	
State Administrator	Office	196	1	1	157	1	1	196	Next to Chief ME Office
Chief Adminstrative Assistant	Office	120	1	1		1	1	120	
State Special Projects Administrator	Office	120	1	1	89	1	1	120	
State Surveillance & Fatality Review Supv.	Office	120	1	1	119	1	1	120	
State Surveillance Grant Reviewers Supv.	Office	120	1	1	104	1	1	120	
State Surveillance Grant Reviewers	Wkstn	64	5	5	320	10	10	640	
State Emergency Planner	Office	120				1	1	120	
State IT Specialist	Office	144	1	1	0	2	2	288	currently shares space in computer room
Subtotal OFFICE SPACE & STAFF			13	13	1,199	20	20	2,069	
Corridors & Bldg. Layout Factor				_	514		_	887	
Assignable Required in Square Feet					1,713			2,956	
SUPPORT SPACE & EQUIPMENT									
State Copy/Work Room			1		160	1		300	
State Office Supply & General File room					194			400	times 2 with High Density Files
Sate Surveillance Locked Storage					118			225	with High Density Files  with High Density Files
Interview/Huddle Room					90	'		225	can use other OCME rooms if co-located
Training Room (28)					900	1		1,700	Grow to (50)
Coffee/Break Area			1 1		40	'		1,700	can combine with other OCME break room if co-located
Server Room (Lims)					167	1		300	To include OCME Data & Phone Equipment
Server Room (Lims)			'		107	'		300	To include Ocivic Bata & Thore Equipment
Subtotal SUPPORT					1,669			2,925	
Corridors & Bldg. Layout Factor					557			975	
Assignable Required in Square Feet				=	2,226		_	3,900	
Office & Support Assignable Total					3,938			6,856	
Office & Support Assignable Total					3,330			0,000	

#### NOTES:

Adjacency Requirements: Special Requirements: **Additional Remarks:** 

It is desireable to co-located the Agency Wide administrative functions noted herein near the Central Virginia Regional Facilities of the

June 7, 2013

OCME Summary Page 1

## Office of Chief Medical Examiner - Central Virginia Facility STATISTICAL SPACE REQUIREMENTS

June 7, 2013

Division or Work Group: Contact:

#### **Central Region Administration**

Contact.									
	0.4				"current"			2026	l peutpico
	Sta Space	n <b>dard</b> Size	Rm. S		A <b>Facility</b> Area	Rm.		A <b>Facility</b> Area	REMARKS:
Office Space & Staff	Туре	(SF-Std)	Qty	Jian	(SF)	Qty	Stail	(SF)	
OFFICE		_			_			_	
OFFICE District Administrator	Office	168	1	1	156	1	1	168	8 LF of shelving in office
Executive Secretary	Office	120	'	'	100		1	120	o Li oi sheiving in onice
Administrative Assistant	Wkstn	120	3	3	305	1	1	120	
Receptionist	Wkstn	120	1	1		1	1	120	Bullet resistant glass @ reception window. Work area for 1 receptionist. Includes guest workstation
Clerical/Administrative	Wkstn	64				6	6	384	Prox. to file room and front reception & Investigators
Medical School Residents	Wkstn	64	4	4	280	4	4	256	
Medical School Residents	Office	225	2	2	675	7	7	1 575	NOTE: Office Space includes supplemental area for
Forensic Pathologist	Office	225	3	3	675	7	7	1,575	NOTE: Office Space includes supplemental area for microscope & consult area which would otherwise be a separate room.
Pathologist Fellow	Office	168	2	2	212	4	4	672	Place in private office
Violent Death Grant Review	Wkstn	64							
Fatality Review Grant Position	Wkstn	64			_		_		
Security	Wkstn	64	0	2	0	2	2	128	part-time, share with sleep office
State Emergency Planner Clerical Open Office	Wkstn Wkstn	<b>64</b> 351							
Transcriptionist	Wkstn	64	2	2	322	3	3	192	
Deputy Chief ME	Office	225	_	_	V				
Consultant Area for 4	Office	256	0	0	0			256	
						1	4		include x-ray reading box and microscope work area
Subtotal OFFICE SPACE & STAFF			16	18	1,950	31	34	3,991	
Corridors & Bldg. Layout Factor			10	10	836	31	34	1,710	
Assignable Required in Square Feet				=	2,786		=	5,701	
7.00.9.140.00 1.04400 1044					_,			0,101	
SUPPORT SPACE & EQUIPMENT									
Main Conference Room for 50						1		750	
Conference for 6								150	
Library/Meeting			1		184	1		184	
Conference/Library for 20 plus bookshelves	3		1		371	1		360	Video Conference
Break Room/Vending/Kitchen			1		14	1		242	
Admin Supply Storage and work counter/co			1		200	1		1,600	
Active/Case Files Room plus Radiology File	m Storage		1 1		246	1		1,600	High Density Files (WVA - 5 years +)
Archive File Room Additional Office Supply Room			l		427	1		140	With High Density shelving
Server Room (Lims)			1		167			225	With Flight Delisity shelving
Work Area						1		100	Counter seated height/Outside consultant
Work Area						1		100	Medical Student/Resident
Evidence Vault									
Lobby/Waiting									See "Public Areas" for Building Lobby/Waiting Area
Mail processing Copy/Print/Mail									
Work Area/Shredder									
Supply/ Copy/Work Room									
		_			_			_	
Subtotal SUPPORT					1,609			5,451	
Corridors & Bldg. Layout Factor				=	537		=	1,818	
Assignable Required in Square Feet					2,146			7,269	
			-						
						1			

4,931

12,970

NOTES:

Adjacency Requirements: Special Requirements:

Additional Remarks:

Office & Support Assignable Total

Office of Chief Medical Examiner - Central Virginia Facility

June 7, 2013

STATISTICAL SPACE REQUIREMENTS

Division or Work Group: Contact:

**Death Investigators** 

,		

			_		'current"	_		2026	
	Stand				Facility			Facility	REMARKS:
	Space	Size	Rm. S	Staff	Area	Rm.	Staff	Area	
Office Space & Staff	Туре	(SF-Std)	<u>Qty</u>		(SF)	<u>Qty</u>		(SF)	
OFFICE									
Lead / Supervisory Investigator	Office	120	1	1	101	4	4	480	
Investigator	Wkstn	64	6	6	600	24	24	1,536	
Forensic Anthropologist	Wkstn	64				1	1	64	
	Wkstn	64							
Clerical/Administrative									
Subtotal OFFICE SPACE & STAFF			7	7	701	29	29	2,080	
Corridors & Bldg. Layout Factor					300			891	
				_			_		
Assignable Required in Square Feet					1,001			2,971	
SUPPORT SPACE & EQUIPMENT									
Work/Project Area									
Work area/ Copy/Print						1		64	for copy/fax area
Conference / Meeting Area			1		120	1		150	Area to meet with law enforcement, seating for 10
Investigators Storage/Supply/Field Gear						1		400	Mass fatality supply, field gear storage
Rx Inventory and Disposal Room						1		120	
Scene Training Room						,		500	living area with bathroom and closet, next to storage/supply room
Evidence Vault			1		39	1 1		39	match current size, to lock evidence received
Subtotal SUPPORT				0	159		0	1,273	
Corridors & Bldg. Layout Factor				U			U	424	
Assignable Required in Square Feet				=	53 212		=	1,697	
Assignable Required in Square Feet					Z1Z			1,097	
Office & Support Assignable Total					1,213			4,669	

NOTES:

Adjacency Requirements: Special Requirements: Additional Remarks:

Overnight shifts with quick access to kitchenette/break room area, quick access to file room, and close proximity to doctors. Regional

Central Region Administration Page 3

## Office of Chief Medical Examiner - Central Virginia Facility STATISTICAL SPACE REQUIREMENTS

June 7, 2013

Division or Work Group: Contact:

Morgue - Central Facility

Office Sp	ice & Staff		
OFFICE Morgue Si Autopsy T		topsy Technician)	
Histologist			
-	FFICE SPAC		
	k Bldg. Layoւ Required in	Square Feet	
SUPPOR <sup>-</sup>	SPACE & E	QUIPMENT - Lat	oorate

Standard			Cent	Facility	Cent	tral VA	Facility	REMARKS:	
	Space	Size	Rm.		Area	Rm.		Area	
Office Space & Staff	Туре	(SF-Std)	Qty		(SF)	Qty		(SF)	
<u>OFFICE</u>									
Morgue Supervisor (Autopsy Technician)	Office	120	1	1	90	1 1	1	120	
Autopsy Technician	Wkstn		3	3	160	7	7	640	one large room at 4 times current, see remarks below. co-locate near
I Padala stat	0.00	400			•		0	0.40	morgue & visible to person walking back to morgue
Histologist	Office	120	0	1	0	2	2	240	Place in office together
Subtotal OFFICE SPACE & STAFF				5	250	10	10	1,000	
Corridors & Bldg. Layout Factor				3	107		10	429	
Assignable Required in Square Feet				_	357		_	1,429	
Assignable Required in Equale 1 eet					337			1,425	
SUPPORT SPACE & EQUIPMENT - Labora	tory								
Funeral Director Waiting Area	<del></del>		1		94	1		180	Near receiving. couch, TV, counter for coffee w/sink. 12x15
Body Receiving			1		183	1		366	twice current
Funeral Director Toilet room						1		50	
Histology Lab			1		340	1		1,020	Expand existing to triple in size
Histology Block and Slide Storage room			1		218	1		436	next to Histology (double the size of current Bone Storage room)
Bio-Vestibule			1		170	1		340	double current-Between Autopsy Suite and Locker/Shower
Locker/Shower/Toilet Rooms for Men & Wom	en		1		628	1		1,570	to accommodate 50 each (2 1/2 times)
Autopsy Tech Work Area						1		100	, , , ,
Military Training Space						1		150	
Main Autopsy Suite			1		1,140	1		2,850	to accommodate 10 Autopsy Stations w/8 feet between (2 1/2 times)
Spectator Platform						1		150	
Decomp. Autopsy/Anthropology			1		348	1		696	Double the size of current Decomp Room
Staging Cooridor			1		415	1		415	·
External Examination Room						1		330	Adjoining to or within Decomp Room
Anthropology Suite						1		330	Size of Decomp Room (22 x 15) plus storage for bone boxes
Neuropath Suite						1		330	Size of Decomp Room (22 x 15) plus storage for Brain boxes
Evidence Drying Room			1		64	1		384	six times size of current
Evidence Storage Room			1		105	1		210	double size of current
Toxicology Storage Walk-in Cooler						1		150	attached to tissue storage area
Freezer and Refrigerator Tissue Storage			1		114	1		228	double current room size 8 freezers 2 refrigerators adjoing walk-in
Specimen Stock Jar Storage Room			1		353	1		706	double current room, deep sink, fume hood and High Density storage
Body Cooler - Deep Freezer			1		104	1		156	6 carts
Body Cooler - Small (for 10)			1		223	1		446	10 carts
Body Cooler - Large (for 50) plus small section	n (for 10)		1		1,085	1		2,170	50 carts partitioned section for 10 carts
Biohazard Trash Bins		9				50		450	space for 50 bins
Body Scale			1		18	1			flush in floor
Radiology - Digital X-ray and Dexis dental X-ra	ay system R	oom	1		265	1		330	each the size of Decomp Room
Radiology - CT Scanner						1		330	each the size of Decomp Room
Radiology - MRI Room						1		330	each the size of Decomp Room
Locked Storage Area			1		137	1		180	locate in or off of bay. Storage of MERC body cooling unit etc.
Secured Drive Trough Body Delivery Port			1		1,965	1		2,705	Enlarge currrent to accommodate second drive aisle if possible
Life Net Tissue Recovery Room			1		153	1		306	double current size. Next to Morgue or Anatomical but separate
Overnight Security Room			1		149			447	include bathroom with shower., bumk bed, security, seating
Break Room for 10						1		150	
Storage Supply Room for Morgue supplies on	ily		1		630	1		1,260	double current size
Chemical Storage with drain			1		44	1		88	double current size
Janitor Storage Room			1		18	1		90	five times current janitor's closet.
Laundry Room			1		80			320	four time current. Six commercial washers, counter, cabinets
Outside Break Area	t Ctarage					1		0	noted but no square footage assigned in building
Portable Morgue colling unit, Large Equipmen	il Storage					'		300	
Subtotal LABORATORY SUPPORT					8,766			21,049	
Corridors & Bldg. Layout Factor					438			3,157	
Assignable Required in Square Feet				=	9,204		-	24,206	
. 15 sg. abio i toquilou ili oqualo i oot					J,2J7			_ 1,_00	
Office & Support Assignable Total					9,562			25,635	
			i .			1			1

#### NOTES:

Adjacency Requirements: Special Requirements: Additional Remarks:

Evidence submission conduit to DFS - so as not to carry blood across lobby

Security cameras - outside evidence rooms. Autopsy Technician Offices at 4 times cuurent: Large open room with (7) L-shaped desks/half-cubicles, 1 Autopsy supervisor with adjoing room for copier, fax, workstation, cabinet storage, paper shredder, coat closet, windows, file cabinets, bookshelves, security monitor and ability to see arriving vehicles into delivery bay.

Office of Chief Medical Examiner - Central Virginia Facility
STATISTICAL SPACE REQUIREMENTS

Division or Work Group:

Contact:

Virginia State Anatomical Program

June 7, 2013

Standard   Space   Size   Type   (SF-Std)   Size   Type   (SF-Std)   Size   Cty   SF   Staff   Area   Qty   (SF)   Similar size office to Pathologists	to morque
Office Space & Staff  Type (SF-Std) Qty (SF) Qty (SF)  Other CE Operational Director Program Supervisor Office 120 Office	to morque
OFFICE Operational Director Program Supervisor Office 196 1 1 1 168 1 1 196 Operational Director Office 120 0 1 0 1 1 120  Embalming Lab Supervisor Office 120 1 1 90 1 1 120 One large room at 4 times current, see remarks below co-locate near morgue & visible to person walking back Part-time transportation specialist Operational Director Office 196 1 1 1 168 1 1 120 One large room at 4 times current, see remarks below co-locate near morgue & visible to person walking back Part-time transportation specialist Operational Director Office 196 1 1 1 190 1 1 1 120 One large room at 4 times current, see remarks below co-locate near morgue & visible to person walking back Part-time Embalming Technician Operational Director Office 196 1 1 1 1 1 120 One large room at 4 times current, see remarks below co-locate near morgue & visible to person walking back Part-time Embalming Technician Operational Director Office 196 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	to morgue
Operational Director Program SupervisorOffice196 1201 01 01 01 1 01 1 1 1196 1	to morque
Operational Director Program Supervisor Office 196 0 1 1 1 168 1 1 1 196 Similar size office to Pathologists  In the part-time transportation specialist Vikstn to part-time transportation specialist V	to morque
Program Supervisor Office 120 0 1 0 1 1 1 120  Embalming Lab Supervisor Adminstrative Assistant Vkstn 64 1 1 64 Part-time transportation specialist Part-time Embalming Technician Vkstn 64 0 1 0 1 0 64  Cremains Return & Crematory Operators Vkstn 64 0 1 0 0 3 0  Cremains Return & Crematory Operators  Office 120 0 1 0 1 1 1 120  One large room at 4 times current, see remarks below co-locate near morgue & visible to person walking back 0 1 1 1 64  Do 1 0 0 3 0 0 3 0 0  Cremains Return & Crematory Operators  Office 120 0 1 0 0 1 1 1 120  One large room at 4 times current, see remarks below co-locate near morgue & visible to person walking back 0 1 0 0 3 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	to morgue
Embalming Lab Supervisor Office 120 1 1 90 1 1 120 one large room at 4 times current, see remarks below Adminstrative Assistant Wkstn 64 1 1 64 1 1 64 co-locate near morgue & visible to person walking back Part-time transportation specialist Wkstn 64 0 1 0 1 64 Cremains Return & Crematory Operators Wkstn 64 0 1 0 2 2 240	to morque
Adminstrative Assistant Wkstn 64 1 1 64 1 1 64 co-locate near morgue & visible to person walking back Part-time transportation specialist Wkstn 64 0 1 0 1 1 64 Part-time Embalming Technician Wkstn 64 0 1 0 0 3 0 Cremains Return & Crematory Operators Wkstn 64 2 2 240	to morque
Adminstrative Assistant Wkstn 64 1 1 64 1 1 64 co-locate near morgue & visible to person walking back Part-time transportation specialist Wkstn 64 0 1 0 1 1 64 Part-time Embalming Technician Wkstn 64 0 1 0 0 3 0 Cremains Return & Crematory Operators Wkstn 64 2 2 240	to morque
Part-time transportation specialist Wkstn 64 0 1 0 1 1 64 Part-time Embalming Technician Wkstn 64 0 1 0 0 3 0 Cremains Return & Crematory Operators Wkstn 64 2 2 240	to morgao
Part-time Embalming Technician Wkstn 64 0 1 0 0 3 0 Cremains Return & Crematory Operators Wkstn 64 2 2 240	· ·
Cremains Return & Crematory Operators Wkstn 64 2 2 240	
, ,	
Transportation specialist Wkstn 64 2 2 128	
Embalming Technician Wkstn 64 2 2 128	
Reception Area 180 Area to meet with donors-separate entrance	
Work/ Office Supply/Copy/Fax Area 1 400 20 x 20 area	
Subtotal OFFICE SPACE & STAFF 3 6 322 13 14 1,640	
Corridors & Bldg. Layout Factor 0 703	
Assignable Required in Square Feet 322 2,343	
2,6 16 2	
SUPPORT SPACE & EQUIPMENT - Laboratory	
Embalming Room 1 1,028 1 1,542 Expand existing to accommodate upto six stations	
Body Cooler 1 1,509 1 1,509 current accomodates up to 400. Will be necessary to a	djust areas
File Storage Area  1 26 1 78 three times current, locate near VSAP Staff area	
Chemical Lab 1 122 1 1 122 For Embalming fluid formation - split and double curren	t size
Chemical and Embalming Storage 122 "See above"	
Locker/Shower/ Toilet Rooms for Men & Women  1 628 for VSAP Staff	
*Crematory or Alkaline Hydrolysis Unit to include:  1 2,000 40 x 50 - Crematory and supporting spaces may be loc	
Area for Processing building. Note additional supporting spaces would be re	equired if
Refrigeration Unit for cadavers prior to cremation seperated. (i.e. loading area offices, toilet rooms etc.)	
Storage Area for Cremated Remains (noted above)	
*Body Cooler - Crematory & Disarticulation 1 0  *Cremains File Storage Area 1 165 1 165 Split with cremains storage and double size	
· · · · · · · · · · · · · · · · · · ·	
*Cremains Storage Area  1 165  Training Area (outside of embelming Lab)	inment plue reers
Training Area (outside of embalming Lab)  Disarticulation Surgical Suite  1 500 Large enough for two operating tables and surgical equal to two operating tables and surgical equal tables are two operating tables and surgical equal tables are two operating tables and surgical equal tables are two operating tables	pinent plus room
Refrigeration Unit for Disarticulation  Loading/Unloading area separate from Morgue  1 225  Covered and Private	
Loading/Onloading area separate from Worgue	
Subtotal LABORATORY SUPPORT 2,850 8,206	
Corridors & Bldg. Layout Factor143	
Assignable Required in Square Feet 2,993 9,437	
Office & Support Assignable Total	
Office & Support Assignable Total 3,315 11,780	

#### NOTES:

Adjacency Requirements: **Special Requirements: Additional Remarks:** 

Page 5 Morgue - Central

STATISTICAL SPACE REQUIREMENTS

Division or Work Group:

**OCME Public Areas** 

Contact:

	_	"current"	_	2026	
Standard	Centi	ral VA Facility	Cent	tral VA Facility	REMARKS:
Space Size	Rm. S	Staff Area	Rm.	Staff Area	
Support Space Type (SF)	Qty	(SF)	Qty	(SF)	
Public Entry/Waiting/Lobby	1	0	1	242	currently part of building lobby
Reception, Security, & Records	0	0	0	0	
Family/Viewing Rooms	0	0	0	0	
Family Waiting & Meeting Room			1	240	Near admin. couch, TV, security camera & panic button. 12x20
Family Waiting Toilet			1	50	
Training Room Suite?	0	shared	1	2,400	Room large enough to accommodate 100 with break out rooms, kitchen area, storage and access to bathrooms. Co-locate with DFS Training Facility to provide flexibility in scheduling and operations
Subtotal	1	0 0	4	0 2,932	
	_		_		
Subtotal OFFICE & SUPPORT NET Square Feet		0		2,932	
Corridors & Bldg. Layout Factor		0	<b>=</b>	977	
Total Usable Area Required in Square Feet	_	0		3,909	

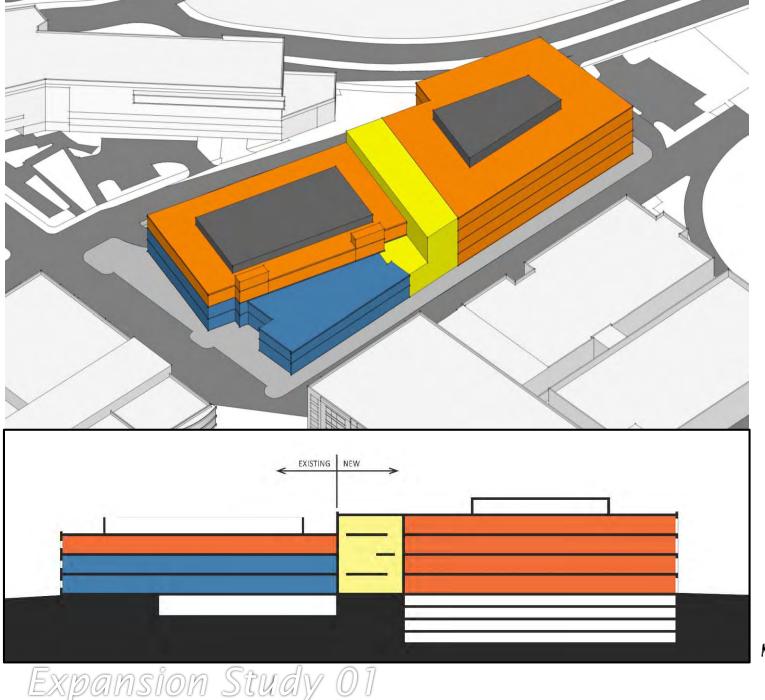
#### NOTES:

**Adjacency Requirements:** 

Special Requirements: Bullet Proof Glass on first floor windows

Additional Remarks: Generator for all of OCME facility portion

OCME Public Areas Page 7

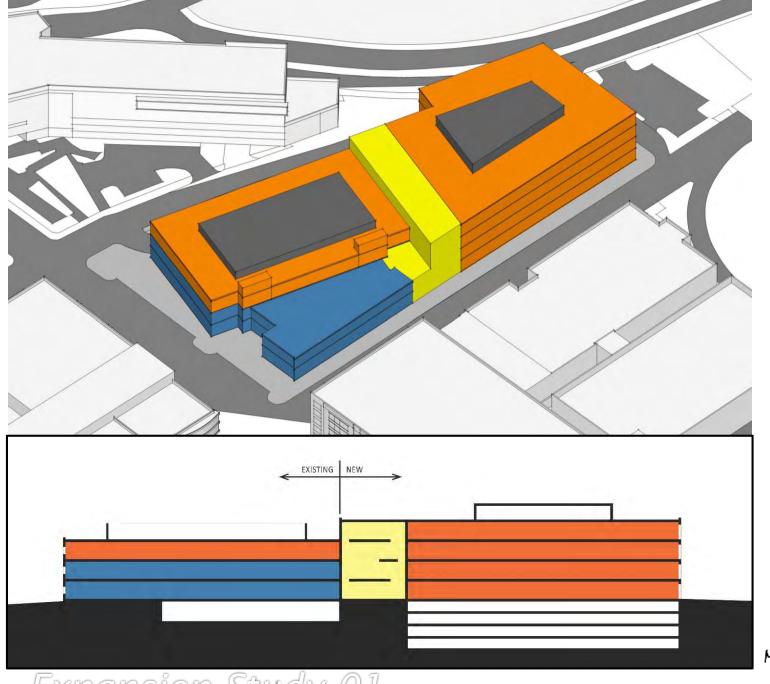


Option 1: Expand existing lab building – anticipated to be 4 story facility with a 4 story u/g parking garage

Code requirements may dictate a separation of 30' between existing and new building or a 2 hr firewall (space shown in yellow).





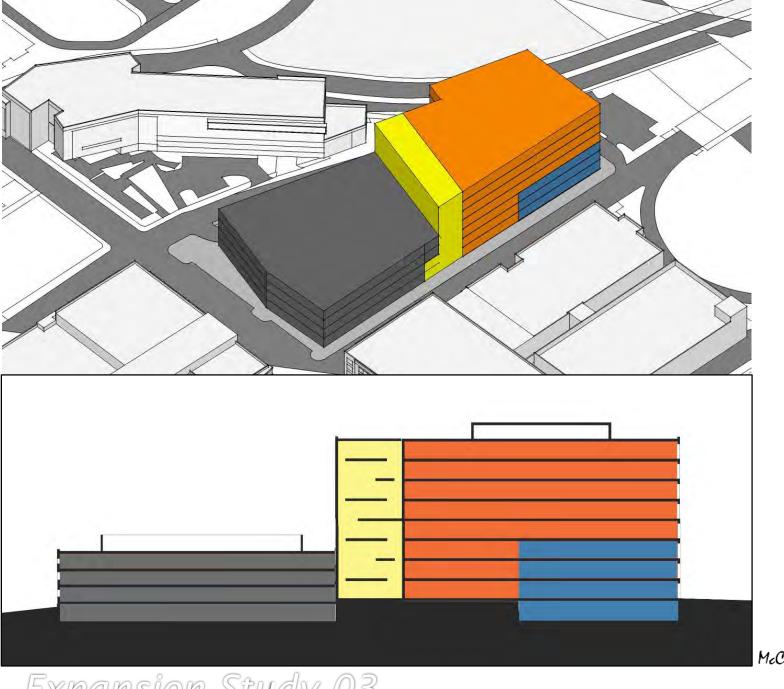


Option 1A: Same as option 1, but early release package for foundations and parking garage.



Expansion Study 01





Option 2: Design new lab/office facility on existing site, demo existing building, and build new above ground parking garage that will support future floor construction.











#### Biotech 8 Expansion (Phases I & II) Virginia Biotechnology Research Park

Richmond, Virginia

In 2011, McKinney and Company provided full-service design and construction management for a six-story, 108,700 SF building addition for Health Diagnostics Laboratory (HDL), leader in health management. The building addition to Biotech 8 includes laboratories, offices, training, and wellness/fitness areas, as well as spaces for warehousing and logistics. The project also added two levels of parking for 200 additional vehicles to the existing, adjacent parking deck.





Prior to HDL occupancy of the Phase I Addition in 2013, McKinney began design of Biotech 8 – Phase II Expansion of six stories, 205,000 SF to provide additional logistics, office, employees amenities and laboratory shell spaces for HDL. Occupancy is planned for April 2014.

In 2014, McKinney completed design for laboratory upfit for floors 2 and 3 of the expansion, totaling 33, 200 SF.

For the past six years, McKinney has provided design and engineering support for the growth of Health Diagnostics Laboratory in the Biotech 8 building on the Virginia Biotechnology Research Park campus. This work has included expansion of utility systems, air, nitrogen, humidity control, emergency power, waste handling and special needs for sensitive testing equipment.







J. Ryan Lingerfelt Lingerfelt Companies 4198 Cox Road, Suite 201 Glen Allen, VA 23060 (804) 270-0015

#### **Biotech 8**

#### Original Bldg. (3) Stories/50'

First Floor 25,708 Receiving/Laboratory/Office for multiple tenants
Second Floor 25,527 Laboratory/Office for multiple tenants
Third Floor 25,058 Laboratory/Office for multiple tenants
76,294 sf

#### **Amenities:**

- (1) Freight Elevator
- (1) Passenger Elevator
- (1) Loading Dock
- Private Employee Garden

#### Parking Garage (6) Levels/59'

Level 'A'	23,324
Level 'B'	22,502
Level' C'	27,676
Level 'D'	27,676
Level 'E'	27,676
Level 'F'	18,970
	147,824 sf

- 393 full size spaces
- 81 compact spaces
- 9 HC spaces
   483

#### Phase 1 & 2 (6) Stories /95'

First Floor	28,517	Lobby/Logistics/Accessioning/IT/Security/Automated Storage and Retrieval System/RO water/Walk-in Cooler/Loading Docks
Second Floor	37,606	Laboratory/Training Room/Offices
Third Floor	37,606	Laboratory/Walk-in Coolers/Offices
Fourth Floor	33,637	Reception/Conference/Break/Training/Work-out/Lockers/Showers
Fifth Floor	33,637	Open/Closed Offices
Sixth Floor	33,637	Open/Closed Offices
	204,640 sf	

#### **Amenities**

- (1)Freight elevator
- (3) Passenger elevators
- (3) Story atrium facing Jackson Street
- (2) Emergency generators
- RO water system
- Steam generator
- Bulk nitrogen system

- Compressed air system
- Roof patio/Green roof
- (2) Story sliding board
- (3) Story automated storage and retrieval system
- (3) storage material handling lift

# **AVAILABLE**

# 8080 AMF Drive, Mechanicsville, VA... Hanover County Location... Interstate Visibility!



### **Exclusive Agents:**

Clifford B. Porter, CCIM, SIOR (804) 521-1442 Direct

### cliff@porterinc.com

Robert E. Porter, Jr., CCIM, SIOR (804) 521-1441 Direct

### bob@porterinc.com

4801 Radford Ave, P.O. Box 6482 Richmond, VA 23230

www.porterinc.com



Working Hard, Working Smart...For Our Customers

- Up to 200,000 SF +/- Facility...
   Including 30,419 SF Office
- 30 Acres +/- Zoned M-2
- 8 Dock High Doors (9' x 10')
- 1 Drive-In Door (15 x 16')
- 16' 21' Ceiling Height
- Wet Sprinklered
- Parking: 246 Spaces
- Located ~5 Miles East of I-95!
- I-295 Visibility!
- For Lease: \$2.75/SF NNN
- For Sale: \$5,250,000

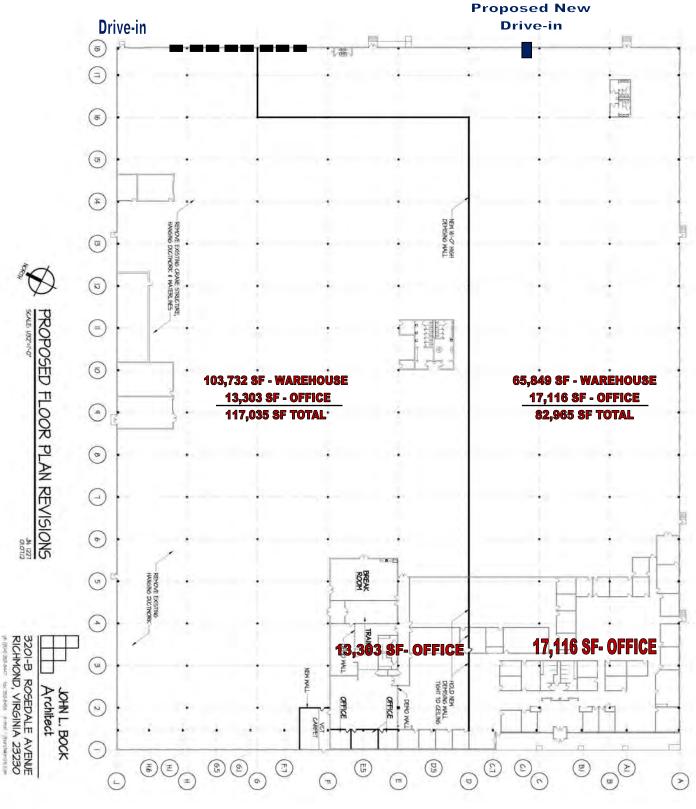






No warranty or representation is made as to the accuracy of the foregoing information. Terms of sale or lease and availability are subject to change or withdrawal without notice.

# 8080 AMF DRIVE



<sup>\*\*\*</sup>Sample possible division, the space can be divided in a multiple of configurations.

# **BUILDING SPECIFICATIONS**

BUILDING LOCATION: 8080 AMF DRIVE

Mechanicsville, VA 23111

SQUARE FOOTAGE: 200,000 SF – Can Divide

OFFICE SQUARE FOOTAGE: 30,419 SF +/-

TRUCK LOADING: (8) 9' x 10' dock doors

(1) 15' x 16' drive-in door

FIRE PROTECTION: 100% Wet Sprinklered

POWER: 3,000 amp 480/277 volt 3 phase

1,500 KVA pad mounted transformer (3) 400 amp buss ducts 300' in length

CEILING HEIGHTS: 16' – 21'

FACILITY DIMENSIONS: 400' X 500'

COLUMN SPACING: 30' X 50'

SEWER: 8" main line

WATER: 16" main line

LIGHTING: 400 watt metal halide fixtures

PARKING: 246 spaces

YEAR BUILT: 1991

HEAT: Via (1) Industrial Air Systems Air turnover unit

(1) Sterling Applied Air – Air turnover unit

CONSTRUCTION: Walls – 6" pre-cast insulated concrete panels

Floors – A 4" post-tension concrete slab

Roof – Nucur SSR 24 gauge galvulume standing seam

VENTILATION: Via 7 Greenback vent fans with louvers

AIR CONDITIONING: 100% of the office area



an Altria Company



# Operations Center 2001 WALMSLEY BOULEVARD :: RICHMOND, VIRGINIA :: USA

CB Richard Ellis is pleased to offer for sale the Philip Morris USA Operations Center facility located in Richmond, Virginia. This headquarters quality building, located on a 186 acre site, features 570,149 SF of office, lab, research and development space and warehouse/manufacturing facilities. Included in the 186 acre site there is approximately 86 acres of land for future development/expansion. The building features state-of-the-art CAT-5e wiring, security systems and is protected by perimeter fencing with guard-gate controlled access.

Strategically located less than five miles from Downtown Richmond, Virginia, the site is easily accessed via Interstate 95 at the Bells Road (Exit 69), and is less than 20 minutes from Richmond International Airport. The Philip Morris USA Operations Center will offer companies looking for a "turnkey" entry into the Mid-Atlantic Region with a unique opportunity to purchase a facility that has been maintained in impeccable fashion.

Richmond, Virginia is home to 14 Fortune 1000 companies and was listed by Forbes Magazine as the 7th Best City in America for Business and Careers. With a population base of over 1.2 million, the area is a magnet for labor, drawing workers from over 40 localities statewide.

CB RICHARD ELLIS

### PHILIP MORRIS USA OPERATIONS CENTER



For more information, please contact:

:: Trib Sutton
Senior Vice President
804.267.7254
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:: John Carpin
Senior Vice President
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john carpin@cbre.com

Executive Vice President 202.585.5673 bill.kaye@cbre.com

:: Bill Prutting
Senior Vice President
202.585.5644
bill.prutting@cbre.com

# 16.20 +/-

Please visit the website of the Philip Morris USA Operations Center at www.cbre.com/pmusaoperationscenter

# **PhilipMorrisUSA**

an Altria Company

### PROPERTY HIGHLIGHTS:

This state-of-the-art, 570,149 SF, three building complex is connected by a common public corridor with full-service cafeteria, escalators, elevators and a combination of open and private work environments. These elements combine to make the Philip Morris USA Operations Center a truly unique opportunity.

The building is situated on an approximate 28.7 acre portion of a 186 acre campus setting and is easily accessed via the Bells Road Interchange at I-95.

Both Investors and Owner/Users will be drawn to the building, due to its functionality, excellent physical condition and "plug and play" capability. Additionally, the building has both wet and dry laboratories, loading docks, executive areas and multiple conference and training rooms.

Constructed in 1982, the buildings and surrounding grounds were designed by the award-winning architect Davis Brody Associates (now Davis Brody Bond). In order to improve communication with employees and throughout company divisions, the building is designed with an internal 22-foot wide skylighted atrium. This atrium provides open circulation linking all of the elements of the building, provides natural light and a pleasant environment for functions more distant from exterior walls and windows.

The building allows three distinct business disciplines to function as a unified complex: (A) Administrative, or general open office, (B) Technical, or analytical research and shop areas and (C) manufacturing or high-bay factory type uses with warehousing capabilities.

Number of Stories: Three for office and research and

development portion

One for warehouse/manufacturing area

Building Height: 36 feet

Roof: Steel frame with built-up tar and gravel

Frame: Steel

Walls: Tilt-up concrete panels with metal and

glass storefront systems















### For more information, please contact:

:: Trib Sutton Senior Vice President 804.267.7254

trib.sutton@cbre.com

:: Bill Kaye Executive Vice President Senior Vice President 202.585.5673 bill.kaye@cbre.com

:: John Carpin

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:: Bill Prutting

202.585.5644 bill.prutting@cbre.com







Please visit the website of the Philip Morris USA Operations Center at www.cbre.com/pmusaoperationscenter

# **PhilipMorrisUSA**

an Altria Company

### The PHILIP MORRIS USA OPERATIONS

**CENTER** is located in Richmond, Virginia and is less than five miles from the Central Business District. Immediate access to the site is available via the Bells Road (Exit 69) on Interstate 95.

### **BUILDING FEATURES INCLUDE:**

 Three-story Operations Center with 463,786 SF of Class A office and lab areas (3 dock doors)

 1st floor
 160,466 SF

 2nd floor
 157,347 SF

 3rd floor
 90,781 SF

 Basement
 55,192 SF

 One-story Semiworks Building of 106,363 SF with 16' to 20' clear ceiling and warehousing/manufacturing capabilities (3 dock doors)

> QA 1st floor 15,801 SF Semiworks 1st floor 86,680 SF Basement 8,882 SF

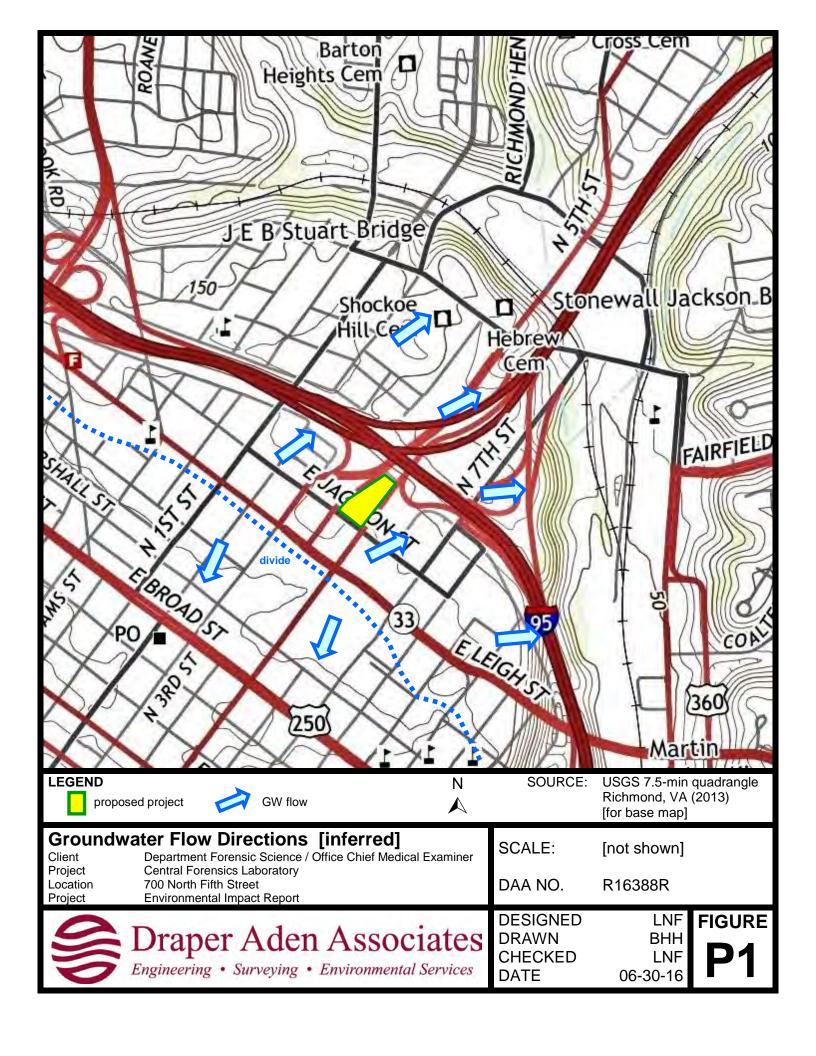
- State-of-the-art laboratory space designed for research and development operations
- Upgraded and well-maintained HVAC system with energy management economizers in place
- Five-service 277/480 volts, 3-phase 4 wire electrical service with 500kW back-up generator for life safety redundance
- Upgraded CAT-5e wiring
- 1,287 paved parking spaces
- Guard-gate controlled access with state-of-the-art security systems and the property is fully enclosed
- M-2 zoning permitting an abundance of research and development, office and manufacturing functions
- Additional land for expansion (86 acres)
- Walking and jogging trails surrounding on-campus lake
- Approximately 12,000 SF Fitness Center with men's and women's locker rooms including showers and changing facilities
- Cafeteria with full-service commercial kitchen seats 309 people



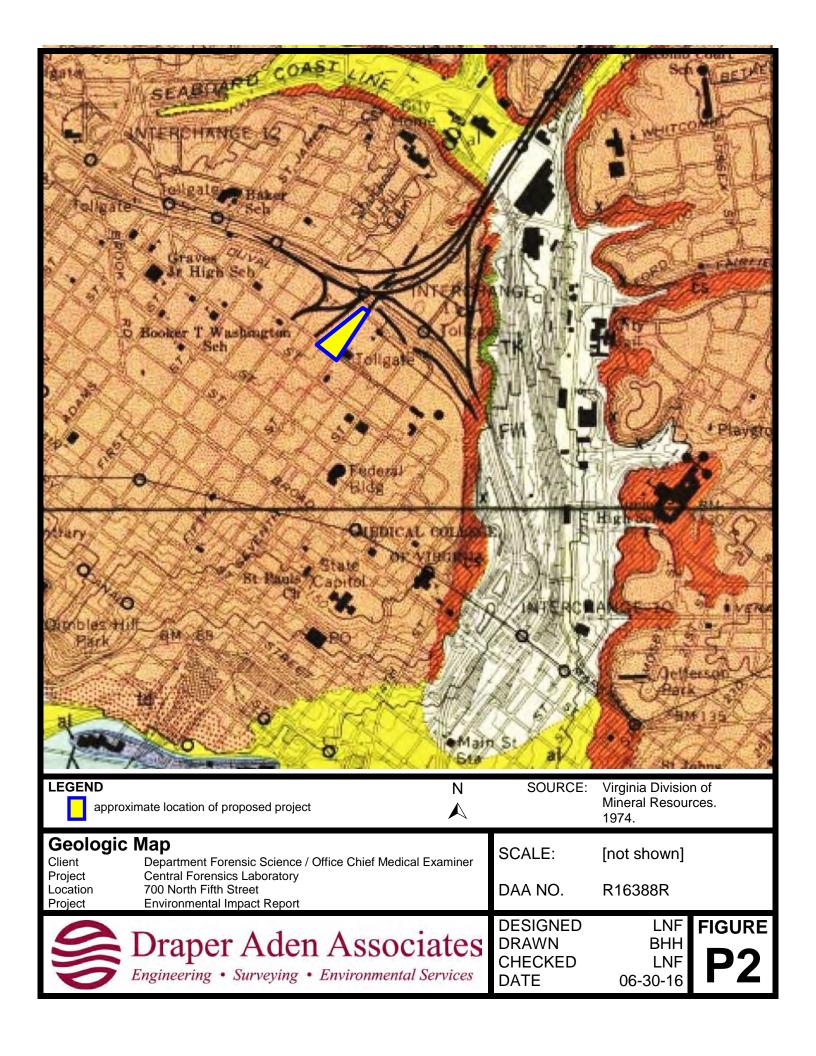
## **APPENDIX 2A**

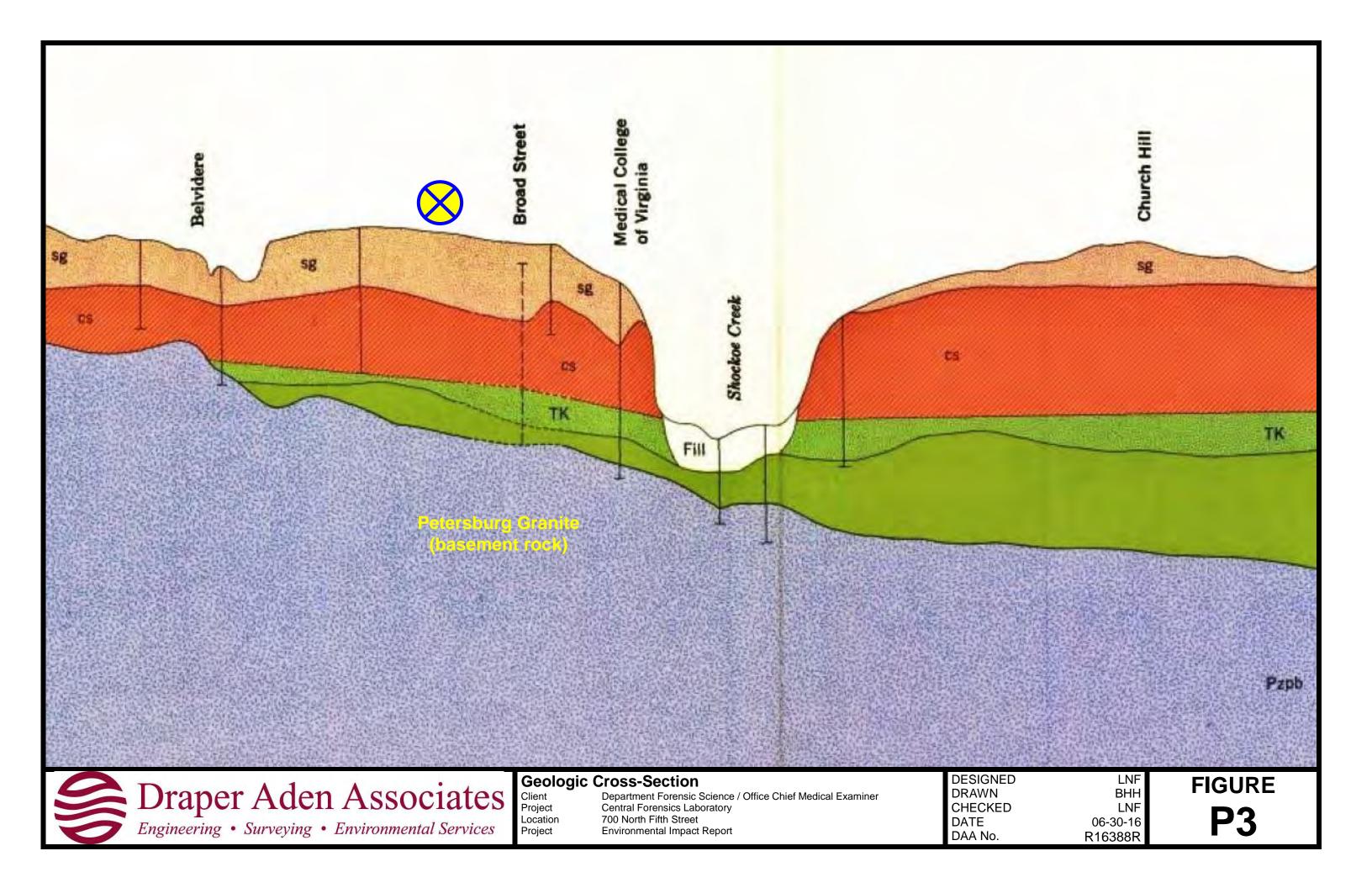
# DOCUMENTATION: PHYSICAL CHARACTERISTICS

A - GROUNDWATER FLOW DIRECTIONS

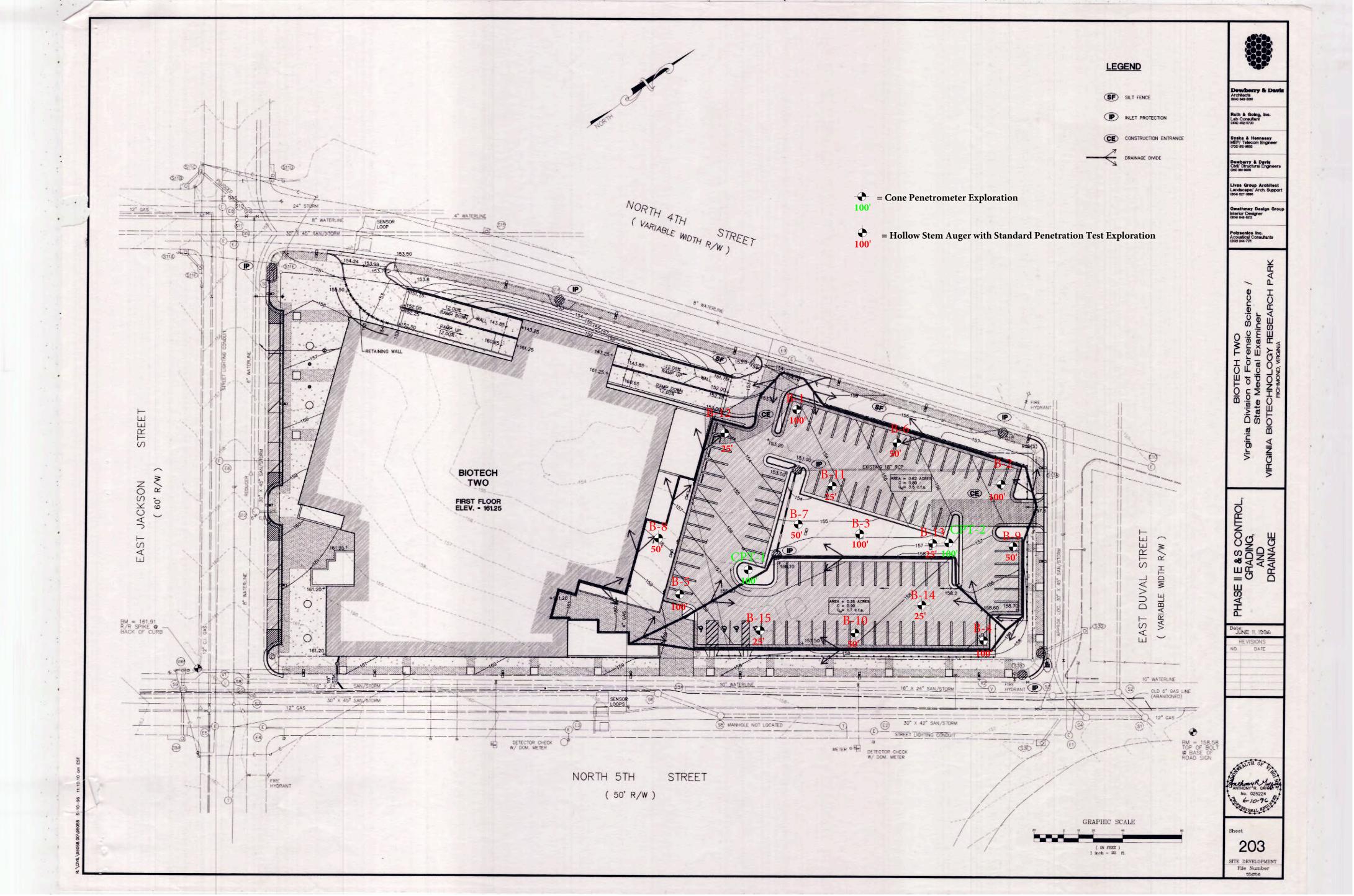








C - GEOTECHNICAL SOIL CONDITIONS	





USCS Clayey

Plasticity Clay

Asphalt

# COMPOSITE SUBSURFACE PROFILE Subsurface Profile

USCS Poorly-graded Gravel

CLIENT SFCS, Inc. PROJECT NAME Central Forensics Lab PROJECT NUMBER R16388R-01G PROJECT LOCATION Richmond, VA B-15 160 160 B-03 B-06 150 150 140 130 120 110 Elevation (ft) Bottom of probable Fill 2.0 4.0 1.0 1.5 Distance Along Baseline (ft)

> Partially Weathered

Topsoil

USCS Elastic Silt USCS Silty Sand



# COMPOSITE SUBSURFACE PROFILE Profile A-A'

CLIENT SFCS, Inc. PROJECT NAME Central Forensics Lab PROJECT NUMBER R16388R-01G PROJECT LOCATION Richmond, VA 2.5 4.5 160 160 B-02 B-06 150 150 140 140 130 120 120 110 Elevation (ft) 100 1.0 1.5 4.5 Distance Along Baseline (ft) **USCS Silty** Asphalt Plasticity Clay



Client:	SFCS	S, Inc				Pro	oject N	No.: 1	R163	88R-	01G	
Project:	: Cent	ral Forensics La	ıb			Dr	iller:	]	Fishb	ourne	Dri	lling, Inc.
Locatio	on: Richi	mond, VA				Me	ethod:	3	3/4	" HS	<b>A</b> w/	SPT
Total Depth	100.0'	Elev GS: <b>154.0'</b>	Logged by: JW			Co	mplet	ion Da	ate:	July	19, 2	2016
Elev.	Depth		SCRIPTION (USCS)	Blow Counts	N Val	116	% Fines	% H <sub>2</sub> O	LL	PL	PI	REMARKS
	7	Approximately 2	2-inches asphalt /	Counts	, ar	uc .	1 IIICS	1120				
_		Sandy Fat CLAY brown organics, medium stiff	Y (CH): red-brown, with dark medium to fine-grained, damp,	3-3-5	6							
_		Clayey SAND (S	SC): light brown, with abundant edium stiff									
-		graver, damp, m	Caram sem	4-5-10-18	15	5						Probable fill material encountered to 6 feet below
150-		Lean CLAY (CI										grade
_	5_			2-2-14-23	16	,						
		Well Graded Gra	avel (GW): dark gray, damp, dense	2 2 14 23	10							
-		Clayey SAND (Storage grained, was to wet, medium	SC): light brown, fine to very with abundant quartz gravel, damp dense to dense	29-20-22-23	42	2						
_												
145—				6-12-15-11	27	7						
_	10-											
_												
_												
-												
140-				2-6-10-15	16	5						
	¥ 15—											
_												
_												
_		South F ( C) A	/ (CID) E-141									
135—		mottling, fine to stiff	Y (CH): light brown with light gray medium grained, moist, medium	3-5-6-7	11							
133 -		Suii		3-3-0-7	11							
-	20—											
-												
-												
		Fat CLAY (CH) hard	gray to dark gray, moist, soft to									
130-				0-1-2-2	3							
-	25—											

Client: SFCS, Inc							Project No.: <b>R16388R-01G</b>								
Project: Ce	ntral Forensics L	ab			Dri	iller:	F	ishb	urne	Dril	ling, Inc.				
Location: Ric	chmond, VA				Me	thod:	3	3/4	' HS	A w/	SPT				
Total Depth 100.0	Elev GS: <b>154.0</b> '	Logged by: JW			Coı	mpleti	ion Da	te:	July	19, 2	016				
Elev. Depth	DI	ESCRIPTION (USCS)	Blow Counts	N Valı	ue	% Fines	% H <sub>2</sub> O	LL	PL	PI	REMARKS				
-															
125—			1-2-2-4	4											
- 30-															
_															
-															
120-			1-2-2-2	4											
35-															
115—			1-3-4-6	7											
- 40-															
_															
1															
110—			2-4-5-10	9											
- 45-															
-															
105—			3-3-7-12	10	)										
- 50-															
_															

Client: SFC	S, Inc			Proje	ect N	o.: <b>F</b>	R163	88R-	01G	
Project: Cen	tral Forensics Lab			Drill	ler:	F	ishb	urne	Dril	ling, Inc.
Location: Ricl	nmond, VA			Meth	hod:	3	3/4'	' HS	<b>A</b> w/	SPT
Total Depth 100.0'	Elev GS: 154.0' Logged by: JW			Com	npletio	on Da	te:	July	19, 2	2016
Elev. Depth	DESCRIPTION (USCS)	Blow Counts	N Val	ue Fi	% ines	% H <sub>2</sub> O	LL	PL	PI	REMARKS
						_				
100		3-4-5-12	9							
100		3-4-3-12	9							
- 55										
95—		2-2-4-7	6							
- 60-										
-										
-										
90										
- 65										
-										
-										
85— -		33-7-8-8	15	;						Shelby tube sampled at 63'-
70										
, ,										
1 -										
-										
80		2-2-3-9	5							
7.5										
7 /5-										
-										
-										
			10							

Client: SFCS, Inc									Project No.: <b>R16388R-01G</b>								
Project: Central Fo	rensics Lab			Driller: Fishburne Drilling, Inc.													
Location: Richmond,	VA			Method	d: <b>(</b>	3 3/4	" HS	A w/	SPT								
Total Depth <b>100.0'</b> Elev G	SS: <b>154.0'</b> Logged by: <b>JW</b>			Compl	etion Da	ate:	July	19, 2	016								
Elev. Depth	DESCRIPTION (USCS)	Blow Counts	N Valı	ie   % Fine	s H <sub>2</sub> O	LL	PL	PI	REMARKS								
75		2-4-6-10															
- 80-																	
70-		3-5-7-15	12														
- 85-																	
70— - 85— - 85— - 90— - 90—		6-6-9-14	15														
7 90-																	
60-		7-17-22-45	39														
		/-1/-22-43	39														
95—																	
55-																	
55—		10-19-26-35	45														
100	Boring terminated at 100 feet.																

Client:						Pro	Project No.: <b>R16388R-01G</b>									
Project	: Cent	ral Forensics La	b			Dr	iller:	I	Fisht	ourne	Dri	lling, Inc.				
	on: Rich	mond, VA				Me	Method: 3 3/4" HSA w/ SPT									
Total Depth	100.0'	Elev GS: <b>157.0'</b>	Logged by: <b>JW</b>			Со	mplet	ion Da	ite:	July	15, 2	2016				
Elev.	Depth	<u> </u>	SCRIPTION (USCS)	Blow Counts	N Val	[	% Fines	% H <sub>2</sub> O	LL	PL	PI	REMARKS				
	7	Approximately 2		Counts	v ai	uc	1 11103	1120								
_			SAND (CH): light brown and light	8-4-4	12	2										
155—		Clayey SAND (S brown with some grained, damp, n	SC): light red-brown and light e dark brown, fine to medium nedium dense	7-8-9-9	17	7						Probable fill material encountered to 6 feet below grade				
-	5—			3-5-9-10	14	1										
150-		Sandy Lean CLA gravel, damp, ve	AY (CL): light brown, with come ry stiff	10-9-12-14	21	l										
-		Clayey SAND (S coarse quartz thr	SC): light brown, coarse to very oughout, damp, medium dense	3-11-18-25	29	9										
145	10			10-19-10-8	29	,										
140-	15-	Sandy Lean CLA red-brown with s to wet, soft	AY (CL): light brown and some dark brown mottling, damp													
-	- <del>- □</del> 20-			4-1-2-3	3											
135—																
-	25	Fat CLAY (CH): amounts of sand,	gray and dark gray, varying moist to wet, soft to hard	3-4-5-4	9											
-	25—															

Client: SFCS, Inc							Project No.: <b>R16388R-01G</b>								
Project: Centra	l Forensics La	ıb			Dri	Driller: Fishburne Drilling, Inc.									
Location: Richmo	ond, VA				Me	thod:	3	3/4'	' HS	A w/	SPT				
Total Depth 100.0' H	Elev GS: <b>157.0'</b>	Logged by: JW			Cor	mpleti	ion Da	te:	July	15, 2	016				
Elev. Depth	DE	SCRIPTION (USCS)	Blow Counts	N Valı	ue   I	% Fines	% H <sub>2</sub> O	LL	PL	PI	REMARKS				
130-															
130															
			0-1-2-2	3											
- 30-															
135															
125—															
			0-2-3-4	5											
- 35-															
120-															
120															
///			0-1-2-5	3											
- 40-															
115-															
			1-3-4-7	7											
45—															
110-															
			2-4-5-10	9											
- 50-															
105															
105—															

Client:	SFCS	s, Inc			Projec	ct No	o.: <b>F</b>	R163	88R-	01G	
Project	Cent	ral Forensics Lab			Drille	er:	F	ishb	urne	Dril	lling, Inc.
Locatio	on: Rich	nond, VA			Metho						SPT
	100.0'	Elev GS: 157.0' Logged by: JW	Plow	N	Comp	pletic	on Dat	te:	July		1
Elev.	Depth	DESCRIPTION (USCS)	Blow Counts	Valu	ie Fin	nes	H <sub>2</sub> O	LL	PL	PI	REMARKS
_											Shelby tube sampled at 53'-5
_	- 55-										
100-											
-											
-	60-		4-6-5-8	11							
-	60										
95—											
-			2-2-4-6	6							
-	65—										
90-											
-											
-	70-		2-2-4-8	6							
-											
85—											
_			2-3-5-8	8							
_	75—										
80-											
_				Q							

Client: SFC		Project No.: <b>R16388R-01G</b>										
Project: Cent	ral Forensics Lab				Dril	ller:	F	ishb	urne	Dril	ling, Inc.	
Location: Rich	mond, VA				Met	thod:	3	3/4"	' HS	<b>A</b> w/	SPT	
Total Depth 100.0'	Elev GS: <b>157.0'</b> Log	ged by: <b>JW</b>			Con	npleti	on Dat	016				
Elev. Depth	DESCRI	PTION (USCS)	Blow Counts 1-3-5-8	N Valı	ie F	% Fines	% H <sub>2</sub> O	LL	PL	PI	REM	IARKS
- 80-												
-												
75—												
-			2250	_								
3 85			3-2-5-8	7								
70-												
-			4-4-9-18	13								
- 90												
(5)												
65—												
			3-4-7-12	11								
- 95—												
60												
-												
100			6-15-25-32	40								
100	Boring term	ninated at 100 feet.										

Client: SFCS, Inc							Project No.: <b>R16388R-01G</b>									
Project	: Centi	al Forensics La	b			Dı	riller:		Fish	burn	e Dri	lling, Inc.				
	on: Richr	nond, VA	I			M	ethod:	:	3 3/4	" HS	A w/	SPT				
Fotal Depth	100.0'	Elev GS: <b>156.0'</b>	Logged by: JW			_	omplet			July	20, 2	2016				
Elev.	Depth	DE	SCRIPTION (USCS)	Blow Counts	N Valı	ue	% Fines	%   H <sub>2</sub> C		PL	PI	REMARKS				
155—		Approximately 3 Clayey SAND (S brick debris, fine dense	-inches topsoil  GC): dark brown and black, with to coarse grained, damp, medium	0-3-9-7	12											
-		Lean CLAY with brown, with orga gravel, moist to c	n Sand (CL): light brown and unics and brick debris, with some lamp, medium stiff	3-3-3-2	6							Probable fill material encountered to 6 feet below grade				
-	5—			1-2-4-9	6											
150-		Clayey SAND (S red-brown, light abundant, damp	SC): light brown with some gray coarse-grained quartz gravel to moist, dense to medium dense	13-12-19-23	31											
-	- 10			3-12-13-12	25	;										
145—																
-	- 15-			5-8-9-9	17	,										
140-																
-	20-	Clayey SAND (S very loose	SC): light brown and brown, wet,	3-1-3-5	4											
135—																
-		Sandy Fat CLAY stiff	(CH): light brown,wet, medium	2-3-4-3	7											
130-	25	Sandy Fat CLAY sand particles, m	(CH): dark gray, fine garined oist to wet, medium stiff to stiff													

Client: SFCS, Inc							Project No.: <b>R16388R-01G</b>								
Project: Cent	ral Forensics La	b			Dri	ller:	F	ishb	urne	Dril	ling, Inc.				
Location: Rich	mond, VA				Me	thod:	3	3/4'	' HS	A w/	SPT				
Total Depth 100.0'	Elev GS: <b>156.0'</b>	Logged by: JW			Coı	mpleti	on Da	te:	July	20, 2	016				
Elev. Depth	DE	SCRIPTION (USCS)	Blow Counts	N Valı	ue	% Fines	% H <sub>2</sub> O	LL	PL	PI	REMARKS				
-			2-3-3-2	6											
- 30-															
125-															
			0-2-3-3	5											
- 35-															
120-															
			1-2-3-5	5											
- 40-															
115—															
			2-2-4-6	6											
- 45-															
110-															
			2-3-4-8	7											
			2-3-4-8	/											
- 50-															
105—															

Client: SFC	S, Inc	Project No.: <b>R16388R-01G</b>											
Project: Cent	ral Forensics Lab			Driller: Fishburne Drilling, Inc.									
Location: Rich	mond, VA			Method: 3 3/4" HSA w/ SPT									
Total Depth 100.0'	Elev GS: 156.0' Logged by: JW			Complet		te:	July	20, 2	2016				
Elev. Depth	DESCRIPTION (USCS)	Blow Counts	N Valu	e   % Fines	%   H <sub>2</sub> O	LL	PL	PI	REMARKS				
- 55-		3-5-5-9	10										
100													
- 60-		0-3-5-4	8										
- - 65—		0-2-3-4	5										
90													
- - - 70-		2-3-4-7	7										
85— -													
- 75-									Shelby tube sampled at 73'-				
80													
			7										

Client:										Pr	Project No.: <b>R16388R-01G</b>											
Project:					La	b							Driller: Fishburne Drilling, Inc.									
	on: Rich	mon	id, V	4	1								M	ethod:		3 3/4	" H	SA v	v/S	PT		
Total Depth	100.0'	Ele	v GS:	156.	.0'	Logge	d by:	JW						Completion Date: July 20, 2016								
Elev.	Depth				DES	SCRIPT	TON (	(USCS)	)		Blow Counts 2-3-4-7	Val	ue	% Fines	% H <sub>2</sub> O	LL	PL	. P	PI		REMA	ARKS
- 75— -	80-																					
_	85—										2-2-3-6	5										
70— _ _	9.0		– – – Partiall	y We	eather	ed Rock	(PWI	 R): dari	- — — — k brown :	 and	40.100.50		1,,,									
65—	90—) 6 90—) 6		gray wi	iui ia	t clay	, moist,	very c	dense			4-9-108-50	50/	1"									
_	-		Sandy moist to	Elasti o wet	ic SII t, stiff	T (MH to very	): dark	 k brown	and gra	 y,		-										
-	95—										7-7-6-7	13	3									
60-												-										
-	100				) ·	.4	-4. 1 ·	4 100 0			7-11-16-21	27	<mark>7</mark> )									
				E	<b>s</b> oring	; termina	ated at	t 100 fe	eet.													

Client:										Project No.: <b>R16388R-01G</b>									
Project:	: Centi	ral Forensics La	ıb			Dri	ller:	I	Fishb	urne	Dri	lling, Inc.							
	n: Richr	mond, VA				Method: 3 3/4" HSA w/ SPT													
Fotal Depth	110.0'	Elev GS: <b>159.0'</b>	Logged by: JW					ion Da	ite:	July	13, 2	2016							
Elev.	Depth	DE	SCRIPTION (USCS)	Blow Counts	N Valı	ıe   I	% Fines	% H <sub>2</sub> O	LL	PL	PI	REMARKS							
_		Approximately 3 Clayey SAND (5 damp, medium of	inches asphalt  CC): red-brown, medium grained, lense	0-7-5-5	12														
-		Fat CLAY with yellow-brown m quartz gravel fro dense	Sand (CH): red-brown with ottling, fine to medium grained m 4'-9', damp, loose fo medium	9-5-5-7	10							Probable fill material encountered to 2 feet below grade							
155—	5—			2-6-8-7	14							grade							
_				9-9-10-8	19														
150-	10-		f): yellow-brown, coarse grained nmon, damp to wet, medium dense	- 3-10-23-25	33														
-																			
145—	15—			7-8-11-10	19	,													
-																			
140-	20—			7-12-18-14	30	1													
-	20																		
135—		Fat CLAY with mottling, damp,	Sand (CH): red-brown with gray medium stiff	3-5-6-7	11														
-	25—																		

									Project No.: <b>R16388R-01G</b>										
Project:	Cent	ral Forensics La	ıb			Driller: Fishburne Drilling, Inc.													
Locatio	n: Rich	mond, VA				Me	thod:	3	3/4'	' HS	<b>A</b> w/	SPT							
Total Depth	Coı	Completion Date: July 13, 2016																	
Elev.	Depth	Elev GS: <b>159.0'</b> DE	Logged by: JW SCRIPTION (USCS)	Blow Counts	N Valı	ue	% Fines	% H <sub>2</sub> O	LL		PI	REMARKS							
-																			
130—		Fat CLAY with amounts of sand	Sand (CH): dark gray, varying , damp, soft to stiff	0-1-2-3	3														
_	30—																		
-																			
125—	35—			0-1-2-3	3														
-																			
120-	40—			1-1-2-2	3														
-																			
115—	45—			2-2-4-6	6														
_																			
110-				2-2-6-8	8														
_	50—																		

								Project No.: <b>R16388R-01G</b>										
Project:	Cent	ral Forensi	cs La	b					Driller: Fishburne Drilling, Inc.									
Location	Location: Richmond, VA								Method: 3 3/4" HSA w/ SPT									
Total Depth 110.0' Elev GS: 159.0' Logged by: JW									Co	Completion Date: July 13, 2016								
Elev.	Depth		DE	SCRIPTION	(USCS)		Blow Counts	N Val	ue	% Fines	% H <sub>2</sub> O	LL	PL	PI	REMA	ARKS		
-						-												
105—							2-3-6-9	9										
1	55—																	
-																		
-																		
-																		
100-							3-3-6-8	9										
	60																	
	00-																	
-																		
-																		
-																		
95—							2-2-3-5	5										
	65-																	
-																		
+																		
90—							2-2-2-5	4										
	70-																	
-																		
-																		
85—							2-3-3-8	6										
_	75—																	
-																		
-						-												

Client:	SFCS,		Pro	oject N	lo.: I	R163	88R-	01G				
Project:	Centr	al Forensics La	b			Dr	iller:	I	ishb	urne	Dril	ling, Inc.
Location Total	n: Richn	nond, VA	T			M	ethod:	3	3/4'	' HS	4 w/	SPT
Depth		Elev GS: <b>159.0'</b>	Logged by: JW	Blow	N		mpleti %		te:	July	13, 2	016
	Depth	DE	SCRIPTION (USCS)	Counts	Valu	ue	Fines	% H <sub>2</sub> O	LL	PL	PI	REMARKS
80-	80-			2-3-5-8								
75—	85-			3-6-8-10	14							
70-	90-			2-2-6-12	8							
65—	95-0		red Rock (PWR) with Silty SAND o damp, very dense	50	50/1	ן"						
60-	100-			2-5-8-10	13							Auger probe 100'-110' in search of rock. No rock encountered
55—												

Client:	SFCS	S, Inc		Project No.: <b>R16388R-01G</b>											
Project	: Cent	ral Forensics La	b			Driller:	Driller: Fishburne Drilling, Inc.								
Locatio	on: Richi	mond, VA				Method: 3 3/4" HSA w/ SPT									
Total Depth	110.0'	Elev GS: <b>159.0'</b>	Logged by: <b>JW</b>			Completion Date: July 13, 2016									
Elev.	Depth		SCRIPTION (USCS)	Blow Counts	N Valu	e Fines	%   H <sub>2</sub> O	LL	PL	PI	REMARKS				
-															
50-	110-														
		Borin	g terminated @ 110 feet												

Client:	: SFCS, Inc								Project No.: <b>R16388R-01G</b>									
Project:	Cer	tra	l Forensics La	ıb				D	riller:		Fishl	ourne	Dri	lling, Inc.				
	n: Ric	hmo	ond, VA	1				Method: 3 3/4" HSA w/ SPT										
Total Depth	100.0	E	Elev GS: 158.5'	Logged by: JW					Completion Date: July 11, 2016									
Elev.	Depth			SCRIPTION (USCS	)	Blow Counts	N Valı	ue	% Fines	% H <sub>2</sub> O	LL	PL	PI	REMARKS				
-			Apptoximately 2			1												
_	-		red-brown lean c some gravel, dan	SC): dark gray stone of clay, fine to medium grap, medium dense to	grained, with very dense	12-5-13	17	,										
155—	-					28-29-29-16	58	3						Probable fill material encountered to 33 feet below grade				
-	5		Sandy Lean CL/ with many brick damp, stiff to me	AY (CL): dark brown fragments, with orga edium stiff	and brown, inics, moist to	6-4-7-5	11							g.uut				
-	-					7-8-7-4	15	;										
150-	-					5-5-3-4	8											
- - - 145—	10 <del></del> - -		Silty SAND (SM brick fragments,	f): brown and red-bro damp, very loose	own, with													
145—	15					2-2-1-1	3											
APEK (G).GD   8/1/16	-		Fay CLAY (CH) dark brown strea	): red-brown to brown king, moist, soft to n	n with some nedium stiff													
240 140 - 140 - 1	- <del>∑</del> 20-					1-1-1-3	2											
GEOLECH SPI CEN IKAL FORENSICS BORING LOGS GPJ DKAPER (G) GD1 8/17	- <b>Y</b> .																	
135—	25-					2-3-3-1	6											
	-					-												

Client:	SFC	CS, I	<b>Inc</b>				Pr	oject l	No.:	R163	88R-	01G	
Project:	Cer	itra	Forensics La	b			Dr	iller:	-	Fishb	urne	Dril	ling, Inc.
	n: Ric	hma	ond, VA				M	ethod:	: .	3 3/4	' HS	<b>A</b> w/	SPT
Total Depth	100.0	' E	lev GS: <b>158.5'</b>	Logged by: JW	1 5: 1		Co		tion D		July	11, 2	016
Elev.	Depth			SCRIPTION (USCS)	Blow Counts	N Valu	ıe	% Fines	% H₂O	LL	PL	PI	REMARKS
-	-		Pottery remnants	): dark brown, with Coal and clay recovered in spoon, medium to ed sand particles, wet, very loose									
130—	30-				1-1-1-1	2							
-	-	-											
125—	35-		Lean CLAY with to very soft	Sand (CL): light brown, wet, sof	0-0-2-2	2							
-	-												
120-	40-		Fat CLAY (CH):	red-brown, moist, soft	0-0-1-2	1							
601 8/1/16			. ,										
115— - 115—	45-				2-2-1-2	3							
GEOLECH SPI CEN IKAL FOKENSICS BORING LOGS GPJ DKAPEK (6), GDJ 8/17	- - -		Fat CLAY (CH):	light brown, damp, medium stiff									
110—	50-				2-4-4-3	8							
	-		grained sand part	(CH): dark gray, fine to medium icles, with some shell fragments 3'-50', wet, medium stiff to stiff									

Client: S	SFCS, Inc							Pro	oject N	lo.: I	R163	88R-	01G			
Project: (	Central Forer	nsics	Lab					Dr	iller:	I	Fishb	ourne	Dril	ling, I	1c.	
Location: I	Richmond, V	A						M	ethod:	3	3/4	" HS	<b>A</b> w/	SPT		
Total Depth 100	<b>).0'</b> Elev GS:	158.	5' L	ogged by	. JW	 			mpleti		ite:	July	11, 2	2016		
Elev. De	1 1				l (USCS)	 Blow Counts	N Val	ue	% Fines	% H <sub>2</sub> O	LL	PL	PI		REMARKS	
																_
105—							_									
						2-4-5-10	9									
:	55—															
1																
-																
-																
100-																
						2-4-5-8	9									
1	60-															
+	50-															
-																
95—						2-2-4-4	6									
-																
- '	05-															
-																
90—							_									
-						2-2-3-4	5									
	70—															
1																
+																
-																
85—																
						2-2-4-6	6									
1	75—															
-																
-																

Client:	SFCS	S, In	ıc									Pr	oject N	No.: ]	R163	88R-	01G			
Project:					Lal	b							iller:					lling, l	Inc.	
Location	n: Rich											M	ethod:		3 3/4	" HS	<b>A</b> w/	SPT		
1	100.0'	Ele	ev GS:			Logged				Blow	L	Co	mplet	ion Da	ate:	July	11, 2	2016		
Elev.	Depth			]	DES	CRIPTI	ON (U	SCS)		Counts	Vali	ue	% Fines	% H <sub>2</sub> O	LL	PL	PI		REMA	RKS
_	80—									2-2-4-5										
-																				
75—	<b>M</b>																			
_	85—									3-2-5-8	7									
-																				
70—	90—									2-4-8-9	12	!								
-	90—																			
-																				
65—			 Clavev	SAND	 D (S(	 C): gray,	mediu	 m to coa		4-5-7-10	12	!								
	95—/		grained	l sand <sub>l</sub>	parti	cles, wet	t, medi	um dens	se to dense											
-																				
60-										4-11-20-29	31									
	100	(X)		Во	oring	g termina	ated at	100 feet												

Client:	SFCS	, Inc				Proj	ject N	lo.: <b>F</b>	R163	88R-	01G	
Project:	Centr	ral Forensics La	b			Dril	ller:	F	Fishb	urne	Dri	lling, Inc.
	n: Richr	nond, VA				Met	thod:	3	3/4	'HS	<b>A</b> w/	SPT
Fotal Depth	50.0'	Elev GS: 155.5'	Logged by: JW					on Da	te:	July	18, 2	2016
Elev.	Depth	DE	SCRIPTION (USCS)	Blow Counts	N Valı	ue F	% Fines	% H <sub>2</sub> O	LL	PL	PI	REMARKS
155—	_	red-brown mottli	AY (CL): yellow-brown with ng, fine to medium grained, some uarts encountered from 3' to 4'.	6-4-4	10	,						
-	-			6-7-13-8	20							Probable fill material encountered to 6 feet below grade
150-	5—	Clayey SAND (S with light brown	SC): light brown and yellow-brown, with medium to coarse grained	5-6-7-12 17-20-24-24	13							
-		graver, damp to r	moist, dense to medium dense	9-15-15-15	30							
145—	10-											
140-	15—	Silty SAND (SM fine to very coars	f): brown with red-brown mottling, se grained, damp, dense	6-21-17-18	38							
135—	∑ -	Sandy Fat CLAY with light gray m	(CH): light brown and red-brown nottling, fine grained, wet, soft	0-1-3-5	4							
- - -		Sandy Fat CLAY medium stiff		2-2-2-3	4							
130—	25—											

	CS, Inc						lo.: <b>F</b>				
Project: Cen	tral Forensics La	ıb			Dri	ller:	F	ishb	urne	Dril	ling, Inc.
Location: Ric	hmond, VA				Me	thod:	3	3/4'	' HS	<b>A</b> w/	SPT
Total Depth 50.0'	Elev GS: <b>155.5'</b>	Logged by: JW			Cor	mpleti	ion Da	te:	July	18, 2	016
Elev. Depth	DE	SCRIPTION (USCS)	Blow Counts	N Valı	ue   I	% Fines	% H <sub>2</sub> O	LL	PL	PI	REMARKS
-											
-											
1 -			1-2-3-2	5							
-											
125—											
-											
-											
-				_							
			0-2-3-5	5							
35—											
120-											
-											
-											
-			1-3-4-6	7							
40-											
115—											
-											
] -											
-			2-3-6-8	9							
-			2300								
110—											
-											
1 -											
-											
-											
			2-3-5-8	8							
50—	Ror	ing terminated at 50 feet									
	100	ing communed at 50 feet									

Client:		S, Inc				Proje	ect N			88R-		
Project:		tral Forensics La	ıb			Drille	er:					lling, Inc.
	on: Rich	mond, VA	1			Meth	nod:	3	3/4	'HS	<b>A</b> w/	SPT
Total Depth	50.0'	Elev GS: <b>155.0'</b>	Logged by: JW					on Da	te:	July	12, 2	2016
Elev.	Depth	DE	ESCRIPTION (USCS)	Blow Counts	N Valı	ıe Fii	% nes	% H <sub>2</sub> O	LL	PL	PI	REMARKS
		Approximately 6										
-		Silty SAND (SM debris including to moist, medium	<ol> <li>light brown, with abundant organics, Brick and gravel, damp n dense to loose</li> </ol>	p 2-10-7-5	17							
-	-			8-5-3-3	8							Probable fill material encountered to 6 feet below grade
150—	5—			2-2-4-12	6							
-		Clayey SAND (Sof gravel quartz to medium dense	SC): light brown, various amunts encountered, damp to moist, den	se 20-25-15-19	40							
-				8-9-13-10	22							
145—	10											
140-	15-	Sandy Fat CLAY mottling, moist t	Y (CH): light brown with gray o wet, medium stiff	11-12-11-11	23							
135	- - 20−			1-3-4-5	7							
- - -		Fat CLAV with	Sand (CH): gray and dark gray,		5							
130—	25—	wet to moist, sof	it to stiff									

Client:	SFCS				Pr	oject N			88R-		
Project:	Cent	ral Forensics Lab			Dr	riller:	]	Fishb	urne	Dril	ling, Inc.
Location	n: Richi	mond, VA			M	ethod:	3	3 3/4	'HS	<b>A</b> w/	SPT
Total Depth	50.0'	Elev GS: 155.0' Logged by: JW	1 - :	1	Co	mplet	ion Da	ate:	July	12, 2	016
Elev.	Depth	DESCRIPTION (USCS)	Blow Counts	N Valı	ue	% Fines	% H <sub>2</sub> O	LL	PL	PI	REMARKS
1											
-			1-1-2-2	3							
125—	30-										
-											
-	35—										
-			1-1-2-3	3							
120-	35-										
120											
-											
+											
-											
			2-2-3-6	5							
115	40		-250								
115—	40—										
-											
-											
			2-3-7-9	10							
1			2-3-1-9	10	'						
110-	45—										
-											
-											
-			1-3-4-6	7							
105—	50	Boring terminated at 50 feet									
		<u> </u>									

Client:	SFC	S, I	nc				Pro	oject N	No.: I	R163	88R-	01G	
Project:	Cent	tral	Forensics La	b			Dr	iller:	ŀ	isht	ourne	Dri	lling, Inc.
	n: Rich	mo	ond, VA				M	ethod:	3	3/4	" HS	A w/	SPT
Total Depth	50.0'	Е	lev GS: 158.0'	Logged by: JW					ion Da	ite:	July	12, 2	2016
Elev.	Depth		DE	SCRIPTION (USCS)	Blow Counts	N Val	ue	% Fines	% H <sub>2</sub> O	LL	PL	PI	REMARKS
	·	<u> </u>		-inches mulch and topsoil									
-			Sandy Lean CLA damp, stiff	Y (CL): brown, with gravel,	1-2-7-9	9							Mulch surfaced flower bed
155—		2000	Poorly Graded Graded Graded Predominantly A screenings, damp loose	ravel with Sand (GP): dark gray, ASHTO #57 stone with gravel to moist, medium dense to very	11-9-9-7	18	3						Loose gravel backfill adjace to building/basement to 23 feet.
-	5—				5-5-6-4	11							
150—		0000			5-3-3-3	6							
-	10—	000000			2-1-3-2	4							
- - 145—		000000											
-	15—0	00000			3-2-2-1	4							
140—		00000											
-	20—	200000			1-2-1-1	3							
-	l I												
135—	25—		Sandy Lean CLA wet, soft to stiff	Y (CL): brown and dark brown,	1-1-1-2	2							

Client	SI	CS,	Inc				Pro	oject N	No.: I	R163	88R-	01G	
Projec	t: Co	entra	al Forensics La	b			Dr	iller:	I	Fishb	urne	Dril	ling, Inc.
Locat	on: Ri	chm	ond, VA				Me	ethod:	3	3/4'	' HSA	<b>4</b> w/	SPT
Total Depth	50.	0'	Elev GS: <b>158.0'</b>	Logged by: JW			Co	mplet	ion Da	ite:	July	12, 2	016
Elev.	Dept	h	DE	SCRIPTION (USCS)	Blow Counts	N Valu	ie :	% Fines	% H <sub>2</sub> O	LL	PL	PI	REMARKS
130-	- 30				0-1-0-1	1							
	-				1-1-2-2	3							
120-													
8/1/16	- - - -	-			2-3-8-2	11							
GEOTECH SPT CENTRAL FORENSICS BORING LOGS GPJ DRAPER (G).GDT 8/1/ -011	_ - - 45	-			1-2-1-1	3							
PT CENTRAL FORENSICS BORIN			Borii	ng terminated at 50 feet	2-2-2-3	4							
GEOTECH SF													

Client:	SFC	5, 1	nc				Pro	oject r	No.: I	(103	ook-	UIG	
Project:	Cent	ral	Forensics La	b			Dr	riller:	I	isht	ourne	Dri	lling, Inc.
Location	n: Rich	mo	nd, VA				Me	ethod:	3	3/4	" HS	<b>A</b> w/	SPT
Total Depth	50.0'	E	lev GS: <b>157.5'</b>	Logged by: JW			Co	mplet	ion Da	te:	July	18, 2	2016
	Depth			SCRIPTION (USCS)	Blow Counts	N		%	% H <sub>2</sub> O		1	PI	REMARKS
	-		Approximately 2	<u> </u>	Counts	v ai	ue	Tilles	1120				
	-		Sandy SILT (ML	): dark gray, medium grained, fragments, damp, medium dense	10-5-4	15	;						
155—			Fat CLAY with smedium grained,	Sand (CH): yellow-brown, fine to damp, stiff	6-6-9-8	15	5						Probable fill material encountered to 6 feet below grade
-	5—				5-5-7-9	12	2						
150—			Clayey SAND (S coarse grained, d	C): light brown and brown, fine to amp, very stiff	12-12-17-17	29	)						
_	10-		Silty SAND (SM coarse grained, q throughout, damp	f): light brown, medium to very uartz gravel encountered b, medium dense	7-13-12-20	25	5						
145—	15—				12-11-12-14	23	3						
140-	20−		Sandy Fat CLAY mottling, wet mo	(CH): light brown with gray ist, soft to stiff	6-3-1-1	4							
135—	25_				4-5-6-9	11							

Client:	SFC	S, Inc								88R-		
Project:	Cent	ral Forensics La	b			Dr	iller:	F	ishb	urne	Drill	ling, Inc.
Location	n: Rich	mond, VA				Me	ethod:	3	3/4	'HS	A w/ \$	SPT
Total Depth	50.0'	Elev GS: <b>157.5'</b>	Logged by: JW					ion Da	te:	July	18, 2	016
Elev.	Depth	DE	SCRIPTION (USCS)	Blow Counts	N Val	ue	% Fines	% H <sub>2</sub> O	LL	PL	PI	REMARKS
-												
130-												
		Sandy Fat CLAY	(CH): gray and dark gray, moist									
_		to wet, soft to sti	ff	1-2-2-3	4							
-	20											
_	30—											
125-												
-												
_				2-3-3-6	6							
	35—											
-												
120-												
	-			2-2-4-5	6							
-	40—											
-												
_												
115—												
113												
-				2-3-6-8	9							
-				2500								
	45—											
_												
110-												
_												
				2-5-6-10	11							
	50	Rori	ng terminated at 50 feet									
		DOLL	ng orininated at 50 feet									

Client:	SFCS	5, Inc				Proje	ect N	Io.: <b>F</b>	R163	88R-	01G	
Project:	Centi	ral Forensics La	b			Drille	er:	F	Fishb	urne	Dri	lling, Inc.
	n: Richr	nond, VA				Meth	od:	3	3/4	'HS	<b>A</b> w/	SPT
Fotal Depth	50.0'	Elev GS: <b>158.0'</b>	Logged by: JW			Comp			te:	July	14, 2	2016
Elev.	Depth		SCRIPTION (USCS)	Blow Counts	N Valı	ue Fir	% nes	% H <sub>2</sub> O	LL	PL	PI	REMARKS
-		concrete) encour	-inches asphalt SC): dark brown to red-brown and ion debris (brick, roof slate, and itered from 2'-4', fine to medium dense to loose	6-3-3	9							
155—				9-5-7-3	12	!						Probable fill material encountered to 10 feet below grade
_	5—7			4-2-3-3	5							
-		Clayey SAND (S grained gravel, d	SC): light brown, with coarse amp, dense	5-8-20-19	30							
150-		Wall Graded Cra	vel with Clay and Sond (CW CC):	3-0-20-19	28							
-		light brown soil gravel constituen	vel with Clay and Sand (GW-GC): with dark gray and light red-brown ts, dry, medium dense	17-25-20-19	45							
145—	10	Clayey SAND w yellow-brown, da dense	ith Gravel (SC): light brown and amp to wet, dense to medium									
- - -	15—			11-15-17-13	32	2						
140				17-19-10-5	29	,						
135—	20	Fat CLAY (CH) damp, stiff	light brown with gray mottling,									
-	25_			2-4-7-6	11							
-	<u>*</u>	Fat CLAY (CH) soft to medium s	gray and dark gray, moist to wet, tiff									

Client: SFCS, Inc						Project No.: R16388R-01G										
Project:	: Cent	tral Forer	nsics	Lab	)				Dr	Driller: Fishburne Drilling, Inc.						
Locatio	on: Rich	mond, V	A						M	Method: 3 3/4" HSA w/ SPT						
Total Depth	50.0'	Elev GS:	158.0	0'	Logged by: JW					mplet		ite:	July	14, 2	016	
Elev.	Depth			DES	CRIPTION (USCS)		Blow Counts	N Val	ue	% Fines	% H <sub>2</sub> O	LL	PL	PI		REMARKS
130-																
-							1-1-2-2	3								
_	30															
-																
125—	-															
-							2-3-4-4	7								
_	35—															
_																
_	_															
120-																
_							1-3-2-4	5								
	40															
	40—															
-																
-																
115—																
_							2-2-4-8	6								
	153 A5															
	45															
-	-															
_																
110-																
							2-4-4-9	8								
							∠ <del>-1-4-</del> 7	8								
-	50		E	Borin	g terminated at 50 fe	et										

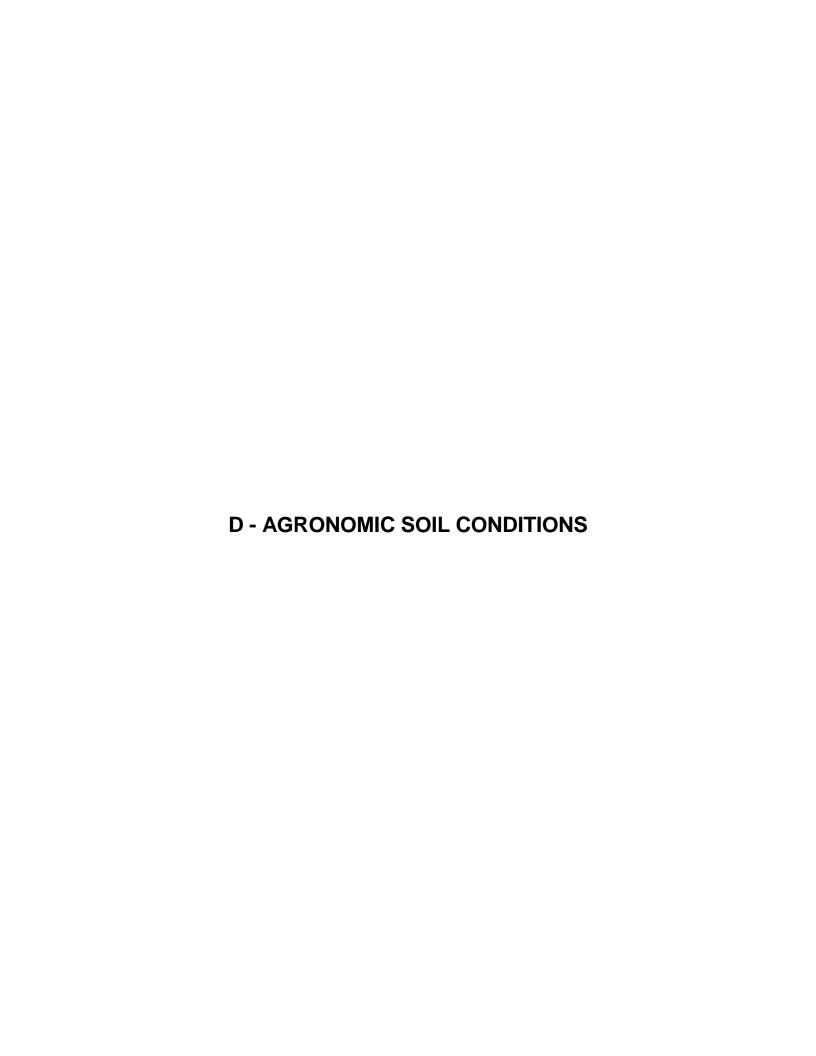
Client:									Project No.: R16388R-01G					
Project:			b				iller:					lling, Inc.		
Location Total	1	nond, VA				Method: 3 3/4" HSA w/ SPT								
Depth	25.0'	Elev GS: <b>154.0'</b>	Logged by: JW	l pi	l ar	Co	mpleti %		ate:	July	12, 2	2016		
Elev.	Depth		SCRIPTION (USCS)	Blow Counts	N Valı	ie ]	% Fines	% H <sub>2</sub> O	LL	PL	PI	REMARKS		
_		Approximately 3 Well Graded Gramoist, medium d	vel (GW): gray and dark gray.	9-4-3	13									
150-		Clayey SAND w damp to moist, w to medium dense	ith Gravel (SC): light brown, vith abundadnt quartz gravel, dense	4-5-18-10	23							Probable fill material encountered to 2 feet below grade		
-	5			4-9-17-19	26									
-				8-19-14-14	33									
145—	10			7-6-11-10	17									
_														
140—	- 15			9-8-6-2	14									
_		Fat CLAY with	Sand (CH): light brown, wet, stiff											
135—	<u> </u>			2-4-5-6	9									
= = -	± 20	Fat CLAY with	Sand (CH): dark brown, wet, soft											
130—	¥ ]			1-1-2-3	3									
	25	Bori	ng terminated at 25 feet											

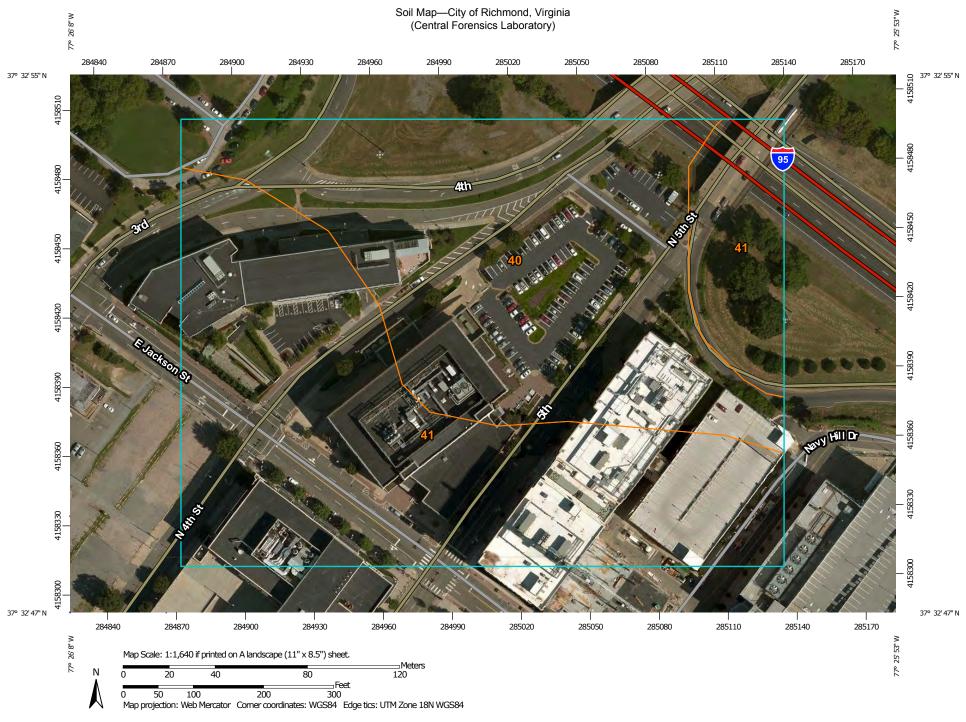
Client:	*								Project No.: R16388R-01G					
Project:		al Forensics La	b			Dril						lling, Inc.		
Locatio Fotal	on: Richn	nond, VA	I			Method: 3 3/4" HSA w/ SPT								
Depth	25.0'	Elev GS: <b>154.0'</b>	Logged by: JW	1				on Da	ite:	July	11, 2	2016		
Elev.	Depth	DE	SCRIPTION (USCS)	Blow Counts	N Valu	ie F	% Fines	% H <sub>2</sub> O	LL	PL	PI	REMARKS		
-		Approximately 2 Clayey SAND (S fragments, mediuto medium stiff	-inches asphalt  GC): brown and dark, with brick um to coarse grained, damp, stiff	4-5-7	9									
150-				3-3-4-4	7							Probable fill material encountered to 13 feet belograde		
-	5—	Silty SAND with grained, damp, v	Gravel (SM): brown, medium ery loose	2-2-1-1	3									
_				1-2-1-1	3									
145—	10-			1-1-1-2	2									
_														
140	15—	Clayey SAND (S coarse grained, v loose	SC): yellow-brown, fine to very with quartz gravel, damp to moist,	2-3-7-8	10									
135—	20-	Fat CLAY (CH) moist, medium s	light brown with gray mottling,	1-4-4-7	8									
130—	<u> </u>	Sandy Fat CLAY grained, wet, me	- (CH): gray, fine to medium dium stiff	2-2-3-3	5									
-	25	Bori	ng terminated at 25 feet											

Chent.	Client: SFCS, Inc						Project No.: <b>R16388R-01G</b>						
Project:	Cent	ral Forensics Lab				Driller: Fishburne Drilling, Inc.							
	n: Rich	mond, VA				Metho	od:	3	3/4'	'HS	<u><b>A</b> w</u> /	SPT	
Total Depth	25.0'	Elev GS: <b>157.0'</b> Lo	gged by: JW			Comp	pletio	n Dat	e:	July	18, 2	2016	
	Depth		IPTION (USCS)	Blow Counts	N Vali		/ <sub>0</sub>	%	LL	PL	PI	REMARKS	
	<u> </u>	Approximately 4-incl		Counts	v an	ie m	ics i	120					
_	_ : - : ::		rk brown to light brown.	2-2-2-2	4								
155—		Sandy Lean CLAY (red-brown, fine grain stiff	CL): yellow-brown and ed, damp, medium stiff to	2-2-3-4	5							Probable fill material encountered to 2 feet below grade	
-	5—			3-5-7-9	12								
_		Silty SAND (SM): lig damp to wet, mediun	tht brown, with quartz gravel, dense										
150-	- : - :			10-12-16-16	28								
_	10—			3-6-26-21	32								
145—													
140—	15—			4-10-14-12	24								
	∑ -	Sandy Fat CLAY (Cl gray mottling, fine gr	H): red-brown and brown with ained, wet, very stiff to stiff	7-9-8-1	17								
135—													
_	25-			3-7-8-10	15								
	25	Boring to	rminated at 25 feet										

Client: SFCS, Inc						Project No.: <b>R16388R-01G</b>					
Project:	Cent	ral Forensics L	ab		I	Driller: Fishburne Drilling, Inc.					
	n: Rich	mond, VA			N	1ethod:	3	3/4	'HS	<b>A</b> w/	SPT
Total Depth	25.0'	Elev GS: <b>158.0'</b>	Logged by: JW			Complet	ion Da	ite:	July	14, 2	2016
Elev.	Depth	D	ESCRIPTION (USCS)	Blow Counts	N Value	% Fines	% H <sub>2</sub> O	LL	PL	PI	REMARKS
-	7. 7. 7. 7.		2-inches gravel /(SC): red-brown, with gravel, moist,	10-6-5	16		2 -				Probable fill material encountered to 6 feet below grade
155—		Silty SAND (S loose	M): gray, with some gravel, damp,	5-3-4-3	7						grade
-	5—	Lean CLAY w moist, medium	ith Sand (CL): dark gray and brown, dense	3-2-5-5	7						
150—		Sandy Lean CI yellow-brown, stiff to hard	AY (CL): light brown and with gravel, damp to wet, medium	5-5-12-19	17						
-	10—			9-15-23-13	38						
145—											
- - -	15-			9-10-8-14	18						
	▼			15-21-17-14	38						
135—		Fat CLAY (CF mottling, moist	I): light brown with dark brown , stiff	4-6-7-7	13						
-	25	Bo	ring terminated at 25 feet								

Client:	*							Project No.: <b>R16388R-01G</b>				
Project:		ral Forensics L	ab			Driller						lling, Inc.
Location Fotal	on: Richr	nond, VA	1			Metho	d:	3				SPT
Depth	25.0'	Elev GS: 158.0'	Logged by: JW	l ni	1 37	Compl			e:	July	14, 2	2016
Elev.	Depth		ESCRIPTION (USCS)	Blow Counts	N Valı	ue Fine	es H	% I <sub>2</sub> O	LL	PL	PI	REMARKS
-		Silty SAND wi red-brown, wit medium dense		11-9-5	20							
155—		Lean CLAY w brown with sor	ith Sand (CL): light brown and ne red-brown, damp, medium stiff	8-4-4-5	8							Probable fill material encountered to 25 feet below grade
-	5—	/// brown to dark l	AY (CL): red-brown and light brown, with gravel, intermittent red throughout, damp to moist, stiff	2-1-3-4	4							
150-				4-4-5-5	9							
-	10-			2-2-3-3	5							
145—					-							
-	15—			2-4-4-2	8							
140-	<u> </u>	Fat CLAY with brown, damp, s	n Sand (CH): light brown and dark									
-	20		AY (CL):brown, with gravel, brick et, soft	0-1-2-3	3							
135—		encountered, w	et, soft									
-	25			1-1-1-2	2							
	25	Во	ring termianted at 25 feet									





# MAP LEGEND

# Area of Interest (AOI)

Area of Interest (AOI)

## Soils

Soil Map Unit Polygons



Soil Map Unit Points

## Special Point Features

Blowout

Borrow Pit

Clay Spot

Closed Depression

Gravel Pit

Gravelly Spot

Landfill

▲ Lava Flow

Marsh or swamp

Mine or Quarry

Miscellaneous Water

Perennial Water

Rock Outcrop

Saline Spot

Sandy Spot

Severely Eroded Spot

Sinkhole

Slide or Slip

Sodic Spot

Spoil Area

Stony Spot

Yery Stony Spot

Wet Spot

Other

Special Line Features

## **Water Features**

Streams and Canals

## Transportation

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

## Background

Aerial Photography

# MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: City of Richmond, Virginia Survey Area Data: Version 12, Dec 11, 2013

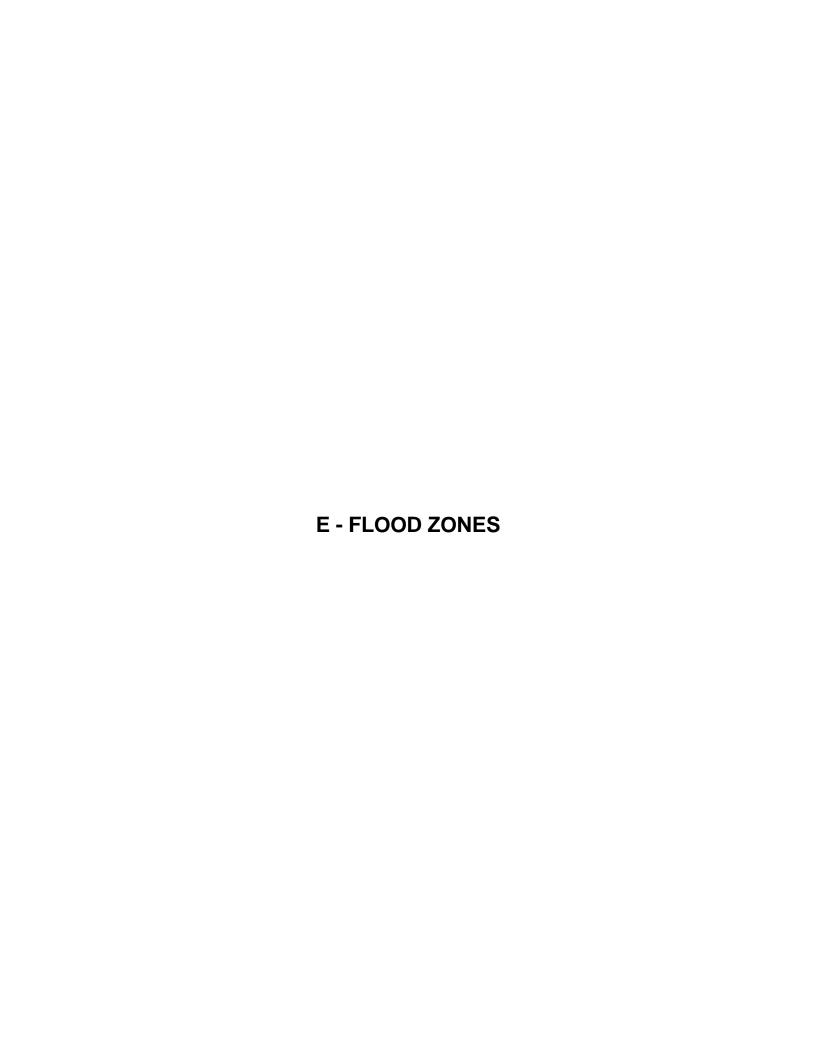
Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

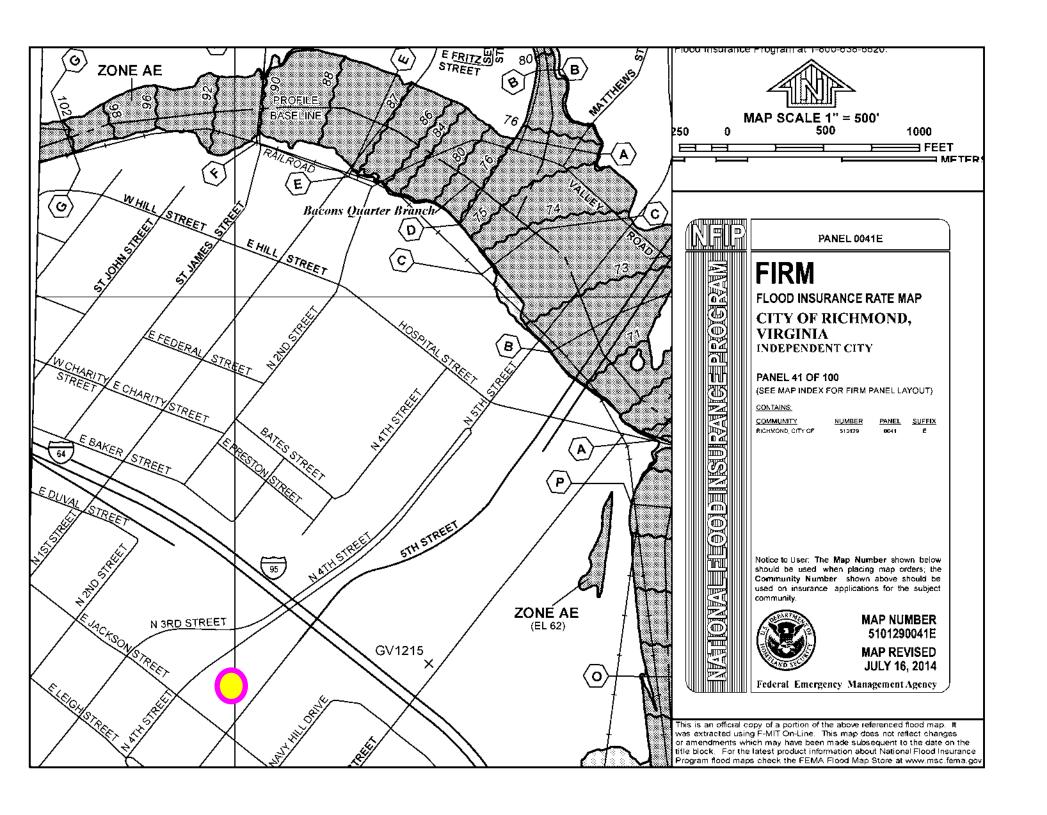
Date(s) aerial images were photographed: Aug 31, 2013—Oct 1, 2013

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

# **Map Unit Legend**

City of Richmond, Virginia (VA760)								
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI					
40	Udorthents-Dumps complex, pits	5.5	43.7%					
41	Urban land	7.1	56.3%					
Totals for Area of Interest	·	12.6	100.0%					





# **LEGEND**



# SPECIAL FLOOD HAZARD AREAS (SFHAS) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A No Base Flood Elevations determined.

ZONE AE Base Flood Elevations determined.

**ZONE AH** Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations

determined.

**ZONE AO** Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average

depths determined. For areas of alluvial fan flooding, velocities also determined.

**ZONE AR** Special Flood Hazard Areas formerly protected from the 1% annual chance

flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide

protection from the 1% annual chance or greater flood.

**ZONE A99** Area to be protected from 1% annual chance flood by a Federal flood

protection system under construction; no Base Flood Elevations determined.

**ZONE V** Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations

determined.

ZONE VE Coastal flood zone with velocity hazard (wave action); Base Flood Elevations

determined.



# FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.



## OTHER FLOOD AREAS

ZONE X

Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.



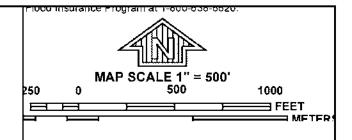
## OTHER AREAS

**ZONE X** Areas determined to be outside the 0.2% annual chance floodplain.

**ZONE D** Areas in which flood hazards are undetermined, but possible.



COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS





## PANEL 0041E

# **FIRM**

FLOOD INSURANCE RATE MAP CITY OF RICHMOND, VIRGINIA INDEPENDENT CITY

**PANEL 41 OF 100** 

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

 COMMUNITY
 NUMBER
 PANEL
 SUFFIX

 RICHMOND, CITY OF
 510129
 0041
 E

Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.



MAP NUMBER 5101290041E MAP REVISED JULY 16, 2014

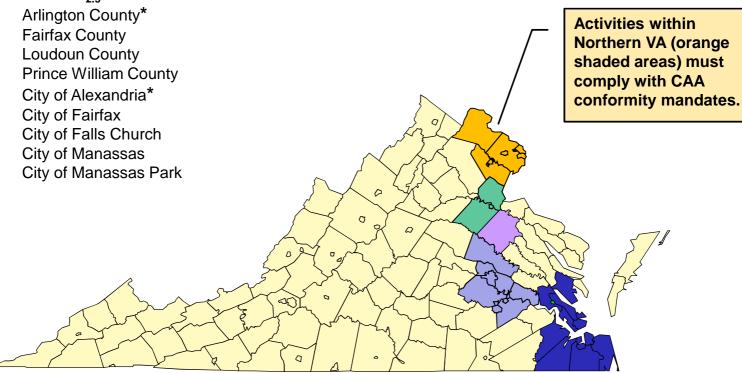
Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.go

F - AIR QUALITY PLANNING AREA	S

# Air Quality Planning Areas for the Commonwealth of Virginia

Northern VA/DC/MD 2008 Ozone NAAQS Nonattainment Area & 1997 PM<sub>2.5</sub> NAAQS Attainment/Maintenance Area



<sup>\*</sup>Alexandria and Arlington are also attainment/maintenance for the 1985 CO NAAQS.



# Hampton Roads Attainment Area/ Voluntary Ozone Advance Action Plan

Gloucester County

Isle of Wight County

James City County

York County

City of Chesapeake

City of Hampton

City of Newport News

City of Norfolk

City of Poquoson

City of Portsmouth

City of Suffolk

City of Virginia Beach

City of Williamsburg



Caroline County Attainment Area/
Voluntary Ozone Advance Action Plan



# Richmond-Petersburg Attainment Area/ Voluntary Ozone Advance Action Plan

**Charles City County** 

**Chesterfield County** 

**Hanover County** 

Henrico County

Prince George County

City of Colonial Heights

City of Hopewell

City of Petersburg

City of Richmond



# Fredericksburg Attainment Area/ Voluntary Ozone Advance Action Plan

Spotsylvania County Stafford County City of Fredericksburg

# **APPENDIX 2B**

# DOCUMENTATION: ECOLOGICAL CHARACTERISTICS

A - PHOTOGRAPHS
[SELECTED SPECIES]

Facility: Central Forensics Laboratory Selected species of interest.



P1 - Rafinesque's eastern big-eared bat (Corynorhinus rafinesquii).



P3 - Northern long-eared bat (Myotis septentrionalis).



P2 - Rafinesque's eastern big-eared bat (Corynorhinus rafinesquii).



P4 - Peregrine falcon (Falco peregrinus).

B - NATURAL HERITAGE ABBREVIATIONS

# **NATURAL HERITAGE**

## **Definitions of Abbreviations used on Natural Heritage Resource Lists**

The following ranks are used by the Virginia Department of Conservation and Recreation to set protection priorities for natural heritage resources. Natural Heritage Resources, or "NHR's," are rare plant and animal species, rare and exemplary natural communities, and significant geologic features. The criterion for ranking NHR's is the number of populations or occurrences, i.e. the number of known distinct localities; the number of individuals in existence at each locality or, if a highly mobile organism (e.g., sea turtles, many birds, and butterflies), the total number of individuals; the quality of the occurrences, the number of protected occurrences; and threats.

- **S1** Critically imperiled in the state because of extreme rarity or because of some factor(s) making it especially vulnerable to extirpation from the state. Typically 5 or fewer populations or occurrences; or very few remaining individuals (<1000).
- **S2** Imperiled in the state because of rarity or because of some factor(s) making it very vulnerable to extirpation from the state. Typically 6 to 20 populations or occurrences or few remaining individuals (1,000 to 3,000).
- **S3** Vulnerable in the state either because rare and uncommon, or found only in a restricted range (even if abundant at some locations), or because of other factors making it vulnerable to extirpation. Typically 21 to 100 populations or occurrences (1,000 to 3,000).
- **S4** Apparently secure; Uncommon but not rare, and usually widespread in the state. Possible cause of long-term concern. Usually>100 populations or occurrences and more than 10,000 individuals.
- **S5** Secure; Common, widespread and abundant in the state. Essentially ineradicable under present conditions. Typically with considerably more than 100 populations or occurrences and more than 10,000 individuals.
- **S#B** Breeding status of an animal within the state
- **S#N** Non-breeding status of animal within the state. Usually applied to winter resident species.
- **S#?** Inexact or uncertain numeric rank.
- **SH** Possibly extirpated (Historical). Historically known from the state, but not verified for an extended period, usually > 15 years; this rank is used primarily when inventory has been attempted recently.
- **S#S#** Range rank; A numeric range rank, (e.g. S2S3) is used to indicate the range of uncertainty about the exact status of the element. Ranges cannot skip more than one rank.

- **SU** Unrankable; Currently unrankable due to lack of information or due to substantially conflicting information about status or trends.
- SNR- Unranked; state rank not yet assessed.
- **SX** Presumed extirpated from the state. Not located despite intensive searches of historical sites and other appropriate habitat, and virtually no likelihood that it will be rediscovered.
- **SNA** A conservation status rank is not applicable because the element is not a suitable target for conservation activities.

**Global Ranks** are similar, but refer to a species' rarity throughout its total range. Global ranks are denoted with a "G" followed by a character. Note GX means the element is presumed extinct throughout its range, not relocated despite intensive searches of historical sites/appropriate habitat, and virtually no likelihood that it will be rediscovered. A "Q" in a rank indicates that a taxonomic question concerning that species exists. Ranks for subspecies are denoted with a "T". The global and state ranks combined (e.g. G2/S1) give an instant grasp of a species' known rarity.

These ranks should not be interpreted as legal designations.

# **FEDERAL STATUS**

The Division of Natural Heritage uses the standard abbreviations for Federal endangerment developed by the U.S. Fish and Wildlife Service, Division of Endangered Species and Habitat Conservation.

C - Candidate (formerly C1 - Candidate category 1)

- Candidate category 2

- Candidate category 3

- Candidate category 3

- Candidate category 1)

- Candidate category 1)

- Candidate category 1)

- Candidate category 1)

- Candidate category 2

- Candidate category 3

- Candidate category 3

- Candidate category 3

- Candidate category 1)

- Candidate category 1)

- Candidate category 1

## **STATE LEGAL STATUS**

The Division of Natural Heritage uses similar abbreviations for State endangerment:

**LE** - Listed Endangered **PE** - Proposed Endangered **SC** - Special Concern - animals that merit special

concern according to VDGIF (not a regulatory

category)

**LT** - Listed Threatened **PT** - Proposed Threatened **C** - Candidate

For information on the laws pertaining to threatened or endangered species, please contact:

U.S. Fish and Wildlife Service for all FEDERALLY listed species;

Department of Agriculture and Consumer Services, Plant Protection Bureau for STATE listed plants and

## insects

Department of Game and Inland Fisheries for all other STATE listed animals

CONSERVATION SITES RANKING

Brank is a rating of the significance of the conservation site based on presence and number of natural heritage resources; on a scale of 1-5, 1 being most significant. Sites are also coded to reflect the presence/absence of federally/state listed species:

# **Conservation Site Ranks**

B1 - Outstanding significance

B2 - Very High significance

B3 - High significance

B4 - Moderate significance

B5 - Of general Biodiversity significance

# **Legal Status of Sites**

FL - Federally listed species present

SL - State listed species present

NL - No listed species present

# Site Location Virginia Fish and Wildlife 37,32,51.0 -77,26,00.2 Information Service is the Search Point Refresh Browser Page Screen Small Map Out Click Scale **Show Position Rings** @ Yes O No 1 mile and 1/4 mile at the Search Point Show Search Area (e) Yes ( ) No 3 Search distance miles Mechanics radius Search Point is at map center RICHW Base Map Choices Topography Map Overlay Choices Current List: Position, Search, BECAR, BAEANests, TEWaters, TierII. Habitat, Trout, Anadromous Map Overlay Legend T & E Waters Federal State Predicted Habitat WAP Tier I & II Aquatic Terrestrial **Trout Waters** Class I - IV Class V - VI Point of Search 37,32,51.0 -77,26,00.2 Anadromous Fish Reach Map Location 37,32,51.0 -77,26,00.2 Confirmed Select Coordinate System: Degrees, Minutes, Seconds Latitude - Longitude O Decimal Degrees Latitude - Longitude Potential O Meters UTM NAD83 East North Zone Impediment O Meters UTM NAD27 East North Zone Base Map source: USGS 1:250,000 topographic maps (see Microsoft terraserver-usa.com for details) Position Rings 1 mile and 1/4 mile at the Search Point 3 mile radius Search Area

Map projection is UTM Zone 18 NAD 1983 with left 275434 and top 4167994. Pixel size is 32 meters. Coordinates displayed are Degrees, Minutes, Seconds North and West Map is currently displayed as 600 columns by 600 rows for a total of 360000 pixles. The map display represents 19200 meters east to west by 19200 meters north to south for a total of 368.6 square kilometers. The map display represents 63002 feet east to west by 63002 feet north to south for a total of 142.3 square miles

Help

# VaFWIS Search Report Compiled on 7/18/2016, 6:31:12 PM

Help

Observations reported or potential habitat occurs within a 3 mile radius around point 37.5475000 -77.4333889 in 087 Henrico County, 760 Richmond City, VA

View Map of Site Location

507 Known or Likely Species ordered by Status Concern for Conservation (displaying first 22) (22 species with Status\* or Tier I\*\* or Tier II\*\*)

<b>BOVA Code</b>			Common Name	Scientific Name
010032	FESE	I	Sturgeon, Atlantic	Acipenser oxyrinchus
060017	FESE	I	Spinymussel, James	Pleurobema collina
060003	FESE	I	Wedgemussel, dwarf	Alasmidonta heterodon
050022	FTST	I	Bat, northern long-eared	Myotis septentrionalis
050034	SE	I	Bat, Rafinesque's eastern big-eared	Corynorhinus rafinesquii macrotis
050027	SE	Ι	Bat, tri-colored	Perimyotis subflavus
050020	SE		Bat, little brown	Myotis lucifugus lucifugus
040096	ST	Ι	Falcon, peregrine	Falco peregrinus
040293	ST	Ι	Shrike, loggerhead	Lanius ludovicianus
060173	FSST	I	Pigtoe, Atlantic	Fusconaia masoni
040292	ST		Shrike, migrant loggerhead	Lanius ludovicianus migrans
010038	FS	IV	<u>Herring, alewife</u>	Alosa pseudoharengus
010045	FS	IV	Herring, blueback	Alosa aestivalis
040093	FS		Eagle, bald	Haliaeetus leucocephalus
030063	CC	III	Turtle, spotted	Clemmys guttata
040092		Ι	Eagle, golden	Aquila chrysaetos
060084		Ι	Pigtoe, Virginia	Lexingtonia subplana
040203		II	Cuckoo, black-billed	Coccyzus erythropthalmus
040052		II	Duck, American black	Anas rubripes
040105		II	Rail, king	Rallus elegans
040181		II	Tern, common	Sterna hirundo
040140		II	Woodcock, American	Scolopax minor

# To view All 507 species View 507

<sup>\*</sup>FE=Federal Endangered; FT=Federal Threatened; SE=State Endangered; ST=State Threatened; FC=Federal Candidate; FS=Federal Species of Concern; CC=Collection Concern

<sup>\*\*</sup>I=VA Wildlife Action Plan - Tier I - Critical Conservation Need;

II=VA Wildlife Action Plan - Tier II - Very High Conservation Need;

III=VA Wildlife Action Plan - Tier III - High Conservation Need;

IV=VA Wildlife Action Plan - Tier IV - Moderate Conservation Need

Virginia Widlife Action Plan Conservation Opportunity Ranking:

- a On the ground management strategies/actions exist and can be feasibly implemented.;
- b On the ground actions or research needs have been identified but cannot feasibly be implemented at this time.;
- c No on the ground actions or research needs have been identified or all identified conservation opportunities have been exhausted.

#### **Anadromous Fish Use Streams**

N/A

# **Impediments to Fish Passage** (4 records)

View Map of All Fish Impediments

ID	Name	River	View Map
815	HAXALL CANAL DAM	JAMES RIVER	<u>Yes</u>
772	HOLLYWOOD POWER PLANT DAM	JAMES RIVER	<u>Yes</u>
778	MANCHESTER/Browns DAM	JAMES RIVER	<u>Yes</u>
773	UPPER SHIELDS LAKE DAM	TR-JAMES RIVER	<u>Yes</u>

# **Threatened and Endangered Waters**

N/A

# **Managed Trout Streams**

N/A

# **Bald Eagle Concentration Areas and Roosts**

N/A

# **Bald Eagle Nests**

N/A

# Habitat Predicted for Aquatic WAP Tier I & II Species

N/A

# Habitat Predicted for Terrestrial WAP Tier I & II Species

N/A

# Virginia Breeding Bird Atlas Blocks

(5 records)

View Map of All Query Results Virginia Breeding Bird Atlas Blocks

DD.	44 0 1 1 1 1	Breeding	* **		
BBA ID	Atlas Quadrangle Block Name	Different Species	Highest TE*	Highest Tier**	View Map
51093	Richmond, CW	36		III	<u>Yes</u>
51092	Richmond, NE	2			Yes
51091	Richmond, NW	2			Yes
51096	Richmond, SE	64		II	Yes
51095	Richmond, SW	80		II	Yes

**Public Holdings:** (2 names)

Name	Agency	Level
Maggie L. Walker National Historical Site	National Park Service	Federal
Richmond National Battlefield Park	National Park Service	Federal

Summary of BOVA Species Associated with Cities and Counties of the Commonwealth of Virginia:

FIPS Code	City and County Name	<b>Different Species</b>	Highest TE	Highest Tier
087	<u>Henrico</u>	389	FESE	I
760	Richmond City	392	FESE	I

# **USGS 7.5' Quadrangles:**

Richmond Seven Pines

# USGS NRCS Watersheds in Virginia:

N/A

USGS National 6th Order Watersheds Summary of Wildlife Action Plan Tier I, II, III, and IV Species:

<b>HU6 Code</b>	USGS 6th Order Hydrologic Unit	<b>Different Species</b>	Highest TE	<b>Highest Tier</b>
JL01	James River-Almond Creek	64	FSSS	II
JL18	<u>Upham Brook</u>	54	FSSS	II
JL19	Chickahominy River-Powhite Creek	71	FSSE	I
JM86	James River-Little Westham Creek	64	FSST	I

Compiled on 7/18/2016, 6:31:12 PM V751390.0 report=V searchType= R dist= 4828.032 poi= 37.5475000 -77.4333889

# D - HABITAT DESCRIPTIONS [SELECTED SPECIES]





5/22/2015 7:49:12 PM

# Fish and Wildlife Information Service

# Habitat chapter for Bat, northern long-eared (050022)

**Habitat:** Terrestrial

#### **References for Habitat**

#### Ref.Id Citation

- 20 Barbour, R.W., W.H. Davis, 1969, Bats of America, 286 pgs., Univ. Kentucky Press, Lexington, Ky.
- 109 Fitch, J.H., Shump, K.A., Jr., 1979, Myotis keenii, Mammalian Species, Num. 121, 3 pgs., Am. Soc. Mammal.
- 147 Handley, C.O., Jr., Linzey, D.W. (Ed.), 1979, The untroubled fauna, Proc. Symp. on Endangered and Threatened Plants and Animals of Virginia, pg. 593-594, 665 pgs., Ext. Div., VA Tech, Blacksburg, VA
- 152 Handley, C.O., Jr., Patton, C.P., 1947, Wild Mammals of Virginia, 220 pgs., Virginia Commission of Game and Inland Fisheries, Richmond, VA
- 8905 Rose, R.K., Cranford, J.A., 1987, Handbook of Virginia Mammals., Final Report, Project No. 567460, 121 pgs., VA Dept. Game & Inland Fisheries, Richmond, VA

#### **Habitat Forest Size Class**

No Habitat Forest Size found.

# **References for Habitat Forest Size**

No References found for Habitat Forest Sizes.

#### **Habitat Society of American Foresters (SAF)**

No Habitat SAF found.

## **References for Habitat SAF References**

No References found for Habitat SAF Referencess.

#### **Habitat Land Use**

Code	Land Use	
40	Forest Land	
41	Deciduous Forest Land	
42	Evergreen Forest Land	
43	Mixed Forest Land	

#### References for Land Use

#### **Ref.Id Citation**

- 20 Barbour, R.W., W.H. Davis, 1969, Bats of America, 286 pgs., Univ. Kentucky Press, Lexington, Ky.
- 152 Handley, C.O., Jr., Patton, C.P., 1947, Wild Mammals of Virginia, 220 pgs., Virginia Commission of Game and Inland Fisheries, Richmond, VA

# **Habitat USFWS National Wetland Inventory (NWI)**

No Habitat USFWS NWI Records found.

# References for USFWS National Wetland Inventory (NWI)

No References found for USFWS National Wetland Inventory (NWI)s.

#### **Habitat Potential Natural Vegetation (PNV)**

Code	Potential Natural Vegetation
094	Mixed Mesophytic Forest
095	Appalachian Oak Forest
097	Northern Hardwoods
101	Oak-Hickory-Pine Forest

#### References for Potential Natural Vegetation (PNV)

#### Ref.Id Citation

- 90 Doutt, J. K., Heppenstall, C. A., Guilday, J. E., 1977, Mammals of Pennsylvania, 282 pgs., Penn. Game Comm, Harrisonburg, PA.
- 9806 Virginia Dept. Game and Inland Fisheries, 1989, Virginia nongame and endangered wildlife investigations-annual report July 1, 1989-June 30, 1990, 140 pgs., Richmond, Va.
- 10865 Virginia Dept. of Game and Inland Fisheries, 1992, Nongame and Endangered Wildlife Program Annual Report, 99 pgs., VDGIF, Richmond, VA
- 10949 Virginia Department of Game and Inland Fisheries, 1995, Collections Database
- 11359 Nongame and Endangered Wildlife, Program, VDGIF, 1995, Nongame Annual Report, 1994-1995, 123 pgs., VDGIF

**Habitat Association:** This species inhabits forested regions, and will forage mainly on hillsides, and ridge forests rather than riparian and flood-plain forests. They frequent areas under the forest canopy just above shrub level \*152,109\*. The males occur in caves in the spring and summer but the females shun caves and roost under tree bark \*8905\*.

#### **Animal or Plant Association:**

#### **Animal or Plant Comments**

#### References for Animal or Plant Association

No References found for Animal or Plant Associations.

#### **USFWS Habitat Evaluation Procedures**

No USFWS Habitat Evaluation Procedures Found

# **References for USFWS Habitat Evaluation Procedures**

No References found for USFWS Habitat Evaluation Proceduress.

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5/22/2015 7:47:48 PM

# Fish and Wildlife Information Service

# Habitat chapter for Bat, Rafinesque's eastern big-eared (050034)

Habitat: Terrestrial

#### **References for Habitat**

#### Ref.Id Citation

- 20 Barbour, R.W., W.H. Davis, 1969, Bats of America, 286 pgs., Univ. Kentucky Press, Lexington, Ky.
- Handley, C.O., Jr., 1959, A revision of American bats of the genera Euderma and Plecotus, Proc. U.S. Natl. Mus., Vol. 110, pg. 95-246, Washington, DC
- 152 Handley, C.O., Jr., Patton, C.P., 1947, Wild Mammals of Virginia, 220 pgs., Virginia Commission of Game and Inland Fisheries, Richmond, VA
- 176 Jones, C., 1977, Plecotus rafinesquii, Mammalian Species No. 69, 4 pgs., Am. Soc. Mammal.
- 2783 Handley, C.O., Jr., Tipton, G., Tipton, A., Linzey, D.W. (Ed.), 1979, Eastern big-eared bat, Proc. symp. on endangered and threatened plants and animals of Virginia, pg. 548-549, Ext. Div., Virginia Polytechnic Institute and State Univ., Blacksburg, Va
- 10778 Clark, M.K., 1990, Roosting ecology of the eastern big-eared bat, Plecotus rafinesquii, in North Carolina, M.S. Thesis, 112 pgs., North Carolina State University
- 10779 Mary K. Clark, Signa B. Williams, 1993, Results of a Survey for the Eastern Big-Eared Bat (Plecotus rafinesquii macrotis) in Southeastern Virginia, 12 pgs., Virginia Dept. of Game and Inland Fisheries

#### Habitat Forest Size Class

No Habitat Forest Size found.

#### **References for Habitat Forest Size**

No References found for Habitat Forest Sizes.

#### **Habitat Society of American Foresters (SAF)**

SAF Type	Stage Type	Canopy Closuer
10100:Baldcypress	mature tree	canopy unknown
10100:Baldcypress	old growth	canopy unknown
10800:Red maple	mature tree	canopy unknown
10800:Red maple	old growth	canopy unknown

#### **References for Habitat SAF References**

#### **Ref.Id Citation**

9284 Settle, F. H., 1989, Report of first Virginia experiintal tundra swan hunting season 1988-89, 7 pgs.

http://vafwis.org/fwis/NewPages/VaFWIS booklet chapters.asp?chapter=10&chapterNam... 5/22/2015

11304 Whitaker Jr., J.O., W.J. Hamilton Jr., 1998, Mammals of the eastern United States, third edition, 583 pp. pgs., Comstock Publishing Associates, Ithaca, NY

#### **Habitat Land Use**

Code	Land Use	
11	Residential	
20	Agricultural Land	
40	Forest Land	
51	Streams and Canals	
52	Lakes	
53	Reservoirs	
54	Bays and Estuaries	
60	Wetland	

#### References for Land Use

#### **Ref.Id Citation**

- 10778 Clark, M.K., 1990, Roosting ecology of the eastern big-eared bat, Plecotus rafinesquii, in North Carolina, M.S. Thesis, 112 pgs., North Carolina State University
- 10779 Mary K. Clark, Signa B. Williams, 1993, Results of a Survey for the Eastern Big-Eared Bat (Plecotus rafinesquii macrotis) in Southeastern Virginia, 12 pgs., Virginia Dept. of Game and Inland Fisheries

#### Habitat USFWS National Wetland Inventory (NWI)

No Habitat USFWS NWI Records found.

#### References for USFWS National Wetland Inventory (NWI)

#### Ref.Id Citation

- 9284 Settle, F. H., 1989, Report of first Virginia experiintal tundra swan hunting season 1988-89, 7 pgs.
- 10778 Clark, M.K., 1990, Roosting ecology of the eastern big-eared bat, Plecotus rafinesquii, in North Carolina, M.S. Thesis, 112 pgs., North Carolina State University
- 11304 Whitaker Jr., J.O., W.J. Hamilton Jr., 1998, Mammals of the eastern United States, third edition, 583 pp. pgs., Comstock Publishing Associates, Ithaca, NY

#### Habitat Potential Natural Vegetation (PNV)

Code	Potential Natural Vegetation	
101	Oak-Hickory-Pine Forest	
103	Southern Floodplain Forest	

#### **References for Potential Natural Vegetation (PNV)**

#### Ref.Id Citation

- 20 Barbour, R.W., W.H. Davis, 1969, Bats of America, 286 pgs., Univ. Kentucky Press, Lexington, Ky.
- Handley, C.O., Jr., 1959, A revision of American bats of the genera Euderma and Plecotus, Proc. U.S. Natl. Mus., Vol. 110, pg. 95-246, Washington, DC
- 152 Handley, C.O., Jr., Patton, C.P., 1947, Wild Mammals of Virginia, 220 pgs., Virginia Commission of Game and Inland Fisheries, Richmond, VA
- Russ, W.P., 1973, The rare and endangered terrestrial vertebrates of Virginia, M.S. Thesis, Virginia Tech, 339 pgs., UNPB, Blacksburg, VA
- 2783 Handley, C.O., Jr., Tipton, G., Tipton, A., Linzey, D.W. (Ed.), 1979, Eastern big-eared bat, Proc. symp. on endangered and threatened plants and animals of Virginia, pg. 548-549, Ext. Div., Virginia Polytechnic Institute and State Univ., Blacksburg, Va
- 10949 Virginia Department of Game and Inland Fisheries, 1995, Collections Database

Habitat Association: Plecotus rafinesquii (macrotis and rafinesquii) occurs in nearly every forest association throughout most of Astroriparian and Carolinian biotic provinces of the southeastern U.S. \*176\*. The eastern big-eared bat is incidental in Virginia because it has adapted to temporate, arboreal zones found only in the extreme southeast \*252\*. The Dismal Swamp specimen was found in a hollow cypress snag. Elsewhere they use the space under loose tree bark or buildings \*8905\*. P.r. macrotis is most often found in houses, or sometimes in hollow trees, behind loose bark, in culverts, or in caves and mines \*252\*. Tree cavities were their traditional roosts. They prefer roosting sites near mature forests and adjacent to rivers and other permanent bodies of water; Man made structures that are most often used have few openings to the attic and have tin roofs, type of structures may have be en influence by the socio-economics of the area (eg. types of houses built); they prefer structures with low light levels. The attics of structures were used more due to higher temperatures during gestation and early growth periods \*10778\*. More closed canopy forest surround occupied sites than the unoccupied ones; tree cavities or other alternate roosts are important to avoid predators and fulfill thermoregulatory needs; tree roosts may be better winter roosts \*10779\*. In North Carolina they were found near old fields and cultivated fields and usually near fresh water \*9284\*.

#### **Animal or Plant Association:**

# **Animal or Plant Comments**

#### **References for Animal or Plant Association**

No References found for Animal or Plant Associations.

#### **USFWS Habitat Evaluation Procedures**

No USFWS Habitat Evaluation Procedures Found

#### **References for USFWS Habitat Evaluation Procedures**

No References found for USFWS Habitat Evaluation Proceduress.

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7/18/2016 6:27:35 PM

# Fish and Wildlife Information Service

# Habitat chapter for Bat, tri-colored (050027)

**Habitat:** Terrestrial

#### **References for Habitat**

#### Ref.Id Citation

- 19 Barber, M., 1976, The Fort Chiswell site: Analysis of vertebrate faunal material recovered during summer 1976, 14 pgs., Radford University, Radford, VA
- 46 Burt, W.H., 1964, A field guide to the mammals, 284 pgs., The Riverside Press, Cambridge, MA
- 89 Douglas, H.H., 1964, Caves of Virginia, 761 pgs., VA Reg. of the Nat'l Speleological Soc.
- 141 Hamilton, W.J., Jr., Whitaker, J.O., Jr., 1979, Mammals of the eastern United States, 346 pgs., Cornell Univ. Press, Cornell, NY
- 152 Handley, C.O., Jr., Patton, C.P., 1947, Wild Mammals of Virginia, 220 pgs., Virginia Commission of Game and Inland Fisheries, Richmond, VA
- 299 Walker, E.P., 1975, Mammals of the World, Vol. 1, 646 pgs., The Johns Hopkins Press, Baltimore, MD
- 1096 Jones, C., Suttkus, R. D., 1973, Colony structure and organization of Pipistrellus subflavus in southeastern Louisiana, J. Mammal., Vol. 54, Num. 4, pg. 962-968
- 8905 Rose, R.K., Cranford, J.A., 1987, Handbook of Virginia Mammals., Final Report, Project No. 567460, 121 pgs., VA Dept. Game & Inland Fisheries, Richmond, VA

#### **Habitat Forest Size Class**

No Habitat Forest Size found.

#### **References for Habitat Forest Size**

No References found for Habitat Forest Sizes.

# **Habitat Society of American Foresters (SAF)**

No Habitat SAF found.

#### **References for Habitat SAF References**

No References found for Habitat SAF Referencess.

#### **Habitat Land Use**

Code	Land Use	
20	Agricultural Land	
21	Cropland and Pasture	

24	Other Agricultural Land	
30	Rangeland	
31	Herbaceous Rangeland	
32	Shrub and Brush Rangeland	
33	Mixed Rangeland	
40	Forest Land	
41	Deciduous Forest Land	
42	Evergreen Forest Land	
43	Mixed Forest Land	

#### References for Land Use

#### Ref.Id Citation

- 5098 Davis, W.H., Mumford, R.E., 1962, Ecological notes on the bat, Pipistrellus subflavus, J. Mammal., pg. 394-398
- 6037 Schwartz, C.W., Schwartz, E.R., 1981, The Wild Mammals of Missouri (2nd Ed.), 356 pgs., Univ. MO Press & MO Conserv. Dept., Columbia, MO
- 6432 Clawson, R., UNPB., MO Dept. Conserv.

## Habitat USFWS National Wetland Inventory (NWI)

No Habitat USFWS NWI Records found.

# References for USFWS National Wetland Inventory (NWI)

No References found for USFWS National Wetland Inventory (NWI)s.

# **Habitat Potential Natural Vegetation (PNV)**

Code	<b>Potential Natural Vegetation</b>	
094	Mixed Mesophytic Forest	
095	Appalachian Oak Forest	
097	Northern Hardwoods	
101	Oak-Hickory-Pine Forest	
103	Southern Floodplain Forest	

# References for Potential Natural Vegetation (PNV)

#### Ref.Id Citation

- 19 Barber, M., 1976, The Fort Chiswell site: Analysis of vertebrate faunal material recovered during summer 1976, 14 pgs., Radford University, Radford, VA
- 89 Douglas, H.H., 1964, Caves of Virginia, 761 pgs., VA Reg. of the Nat'l Speleological Soc.
- 134 Hall, E.R., 1981, The Mammals of North America, Vol. 1,2, 1271 pgs., John Wiley and Sons, New York

- 152 Handley, C.O., Jr., Patton, C.P., 1947, Wild Mammals of Virginia, 220 pgs., Virginia Commission of Game and Inland Fisheries, Richmond, VA
- 215 Meanley, B., 1971, Great Dismal Swamp mammals, Atlantic Natl., Vol. 26, Num. 1, pg. 17-18
- 10949 Virginia Department of Game and Inland Fisheries, 1995, Collections Database
- 11161 VA Dept. of Game and Inland Fisheries, 1995, Caves database

**Habitat Association:** They are found in caves, trees/vegetation, sometimes buildings in both wooded and cleared areas \*152,141,19\*. Throughout their range, this species will hibernate in caves \*8867\*. They roost in caves in the winter and in caves, trees, cliffs and barns in the summer months \*8905\*.

#### **Animal or Plant Association:**

#### **Animal or Plant Comments**

# **References for Animal or Plant Association**

#### Ref.Id Citation

- 30 Berg, W.E., 1979, Ecology of bobcats in northern Minnesota, Bobcat Research Conf. Proc., Vol. 6, pg. 55-61, National Wildl. Fed. Sci. Tech. Rep., Washington, D.C.
- 40 Bromley, P.T., R. Lochmiller, D.L. Chapman, 1979, Raccoon biology and management, 7 pgs., VPI & SU, Extension Div., Blacksburg, VA
- 6434 Harlow, R.F., Lennartz, M.R., 1977, Food of nestling red-cockaded woodpeckers in coastal South Carolina., AUK, Vol. 94, pg. 376-377

#### **USFWS Habitat Evaluation Procedures**

No USFWS Habitat Evaluation Procedures Found

#### **References for USFWS Habitat Evaluation Procedures**

No References found for USFWS Habitat Evaluation Proceduress.

audit no. 751390 7/18/2016 6:27:35 PM Virginia Fish and Wildlife Information Service © 1998-2016 Commonwealth of Virginia Department of Game and Inland Fisheries





7/18/2016 6:28:18 PM

# Fish and Wildlife Information Service

# Habitat chapter for Bat, little brown (050020)

**Habitat:** Terrestrial

#### **References for Habitat**

#### Ref.Id Citation

- 20 Barbour, R.W., W.H. Davis, 1969, Bats of America, 286 pgs., Univ. Kentucky Press, Lexington, Ky.
- 108 Fenton, M. B., R. M. R. Barclay, 1980, Myotis lucifugus, Mammalian Species, Num. 142, 8 pgs., Am. Soc. Mammal.
- Hamilton, W.J., Jr., Whitaker, J.O., Jr., 1979, Mammals of the eastern United States, 346 pgs., Cornell Univ. Press, Cornell, NY
- 152 Handley, C.O., Jr., Patton, C.P., 1947, Wild Mammals of Virginia, 220 pgs., Virginia Commission of Game and Inland Fisheries, Richmond, VA
- Humphrey, S.R., J.B. Cope, 1976, Population ecology of the little brown bat, Myotis lucifigus, in Indiana and north-central Kentucky, Am. Soc. Mammal., 81 pgs.
- 8905 Rose, R.K., Cranford, J.A., 1987, Handbook of Virginia Mammals., Final Report, Project No. 567460, 121 pgs., VA Dept. Game & Inland Fisheries, Richmond, VA

#### **Habitat Forest Size Class**

No Habitat Forest Size found.

#### **References for Habitat Forest Size**

No References found for Habitat Forest Sizes.

#### **Habitat Society of American Foresters (SAF)**

No Habitat SAF found.

#### **References for Habitat SAF References**

No References found for Habitat SAF Referencess.

#### **Habitat Land Use**

Code	Land Use
10	Urban or Built-up Land
11	Residential
12	Commercial and Services
16	Mixed Urban or Built-up Land

17	Other Urban or Built-up Land
20	Agricultural Land
21	Cropland and Pasture
24	Other Agricultural Land
40	Forest Land
41	Deciduous Forest Land
42	Evergreen Forest Land
43	Mixed Forest Land
50	Water
51	Streams and Canals
52	Lakes
53	Reservoirs
60	Wetland
61	Forested Wetland
70	Barren Land
75	Strip Mines, Quarries, and Gravel Pits

#### **References for Land Use**

# **Ref.Id Citation**

- 20 Barbour, R.W., W.H. Davis, 1969, Bats of America, 286 pgs., Univ. Kentucky Press, Lexington, Ky.
- 90 Doutt, J. K., Heppenstall, C. A., Guilday, J. E., 1977, Mammals of Pennsylvania, 282 pgs., Penn. Game Comm, Harrisonburg, PA.
- 108 Fenton, M. B., R. M. R. Barclay, 1980, Myotis lucifugus, Mammalian Species, Num. 142, 8 pgs., Am. Soc. Mammal.
- 141 Hamilton, W.J., Jr., Whitaker, J.O., Jr., 1979, Mammals of the eastern United States, 346 pgs., Cornell Univ. Press, Cornell, NY
- 152 Handley, C.O., Jr., Patton, C.P., 1947, Wild Mammals of Virginia, 220 pgs., Virginia Commission of Game and Inland Fisheries, Richmond, VA
- Humphrey, S.R., J.B. Cope, 1976, Population ecology of the little brown bat, Myotis lucifigus, in Indiana and north-central Kentucky, Am. Soc. Mammal., 81 pgs.

# **Habitat USFWS National Wetland Inventory (NWI)**

No Habitat USFWS NWI Records found.

# References for USFWS National Wetland Inventory (NWI)

#### **Ref.Id Citation**

20 Barbour, R.W., W.H. Davis, 1969, Bats of America, 286 pgs., Univ. Kentucky Press, Lexington, Ky. 108

- Fenton, M. B., R. M. R. Barclay, 1980, Myotis lucifugus, Mammalian Species, Num. 142, 8 pgs., Am. Soc. Mammal.
- 11320 Kunz, T.H., P.A. Racey, eds., 1998, Bat biology and conservation, 365 pp. pgs., Smithsonian Institution Press, Washington, DC

## Habitat Potential Natural Vegetation (PNV)

Code	Potential Natural Vegetation	
065	Northern Cordgrass Prairie	
095	Appalachian Oak Forest	
097	Northern Hardwoods	
101	101 Oak-Hickory-Pine Forest	

# References for Potential Natural Vegetation (PNV)

#### Ref.Id Citation

- 124 Gifford, C.L., Whitebread, R., 1951, Mammal survey of southcentral Pennsylvania Pittman Robertson Project 38-R, 75 pgs., Penn. Game Comm., Harrisburg, PA
- 131 Grimm, W.C., Roberts, H.A., 1950, Mammal survey of southwestern Pennsylvania, Pittman-Robertson Project 24-R, 99 pgs., Penn. Game Comm., Harrisburg, PA
- 132 Grimm, W.C., Whitebread, R., 1952, Mammal survey of northeastern Pennsylvania, Pittman-Robertson Project 42-R, 82 pgs., Penn. Game Comm., Harrisburg, PA
- 243 Richmond, N.D., Roslund, H.R., 1949, Mammal survey of northwestern Pennsylvania, Pittman-Robertson Project 20-R, 67 pgs., Penn. Game Comm., Harrisburg, PA
- 244 Roberts, H.A., Early, R.C., 1952, Mammals survey of southeastern Pennsylvania, Pittman-Robertson Project 43-R, 70 pgs., Penn. Game Comm., Harrisburg, PA
- 250 Roslund, H.R., 1951, Mammal survey of northcentral Pennsylvania, Pittman-Robertson Project 37-R, 55 pgs., Penn. Game Comm., Harrisburg, PA
- 8867 VA Dept. of Game and Inland Fisheries, 1988, Virginia nongame and endangered wildlife investigations Annual Report July 1, 1987 June 30, 1988, 143 pp. pgs.
- 9261 Dalton, V. M., 1987, Distribution, abundance, and status of bats hibernating in caves in Virginia, Va. Journal of Sci., Vol. 38, Num. 4, pg. 369-379
- 10865 Virginia Dept. of Game and Inland Fisheries, 1992, Nongame and Endangered Wildlife Program Annual Report, 99 pgs., VDGIF, Richmond, VA
- 10949 Virginia Department of Game and Inland Fisheries, 1995, Collections Database
- 11165 National Museum of Natural History, 1996, Smithsonian Institution, National Museum of Natural History museum records for birds and mammals
- 11321 Linzey, D.W., 1998, The mammals of Virginia, 459 pp. pgs., McDonald and Woodward Publishing Comp., Blacksburg, VA
- 11335 Information Center for the Environment at U.C. Davis, 1999, "Species in Parks: Flora and Fauna Database Online Query System.", ice.ucdavis.edu/nps/, U.C. Davis
- Nongame and Endangered Wildlife, Program, VDGIF, 1995, Nongame Annual Report, 1994-1995, 123 pgs., VDGIF

**Habitat Association:** This species will roost in caves, buildings, rocks and trees \*132,8905\*, under bridges, in mines and in tunnels \*20\*. They hibernate mostly in caves, mine shafts and abandoned tunnels \*90\*. They may dwell in man-made structures \*45\*. and may collide with aircraft \*70\*. This is one of the most abundant insectivorous bats in Virginia \*168,20,89\*. They are found in all forested regions \*8905\*. Water is an important component of the foraging habitat \*11321,11320\*.

**Animal or Plant Association:** Parasites: trematodes; cestodes; helminths; chiggers; fleas; mites; bedbugs are common

**Animal or Plant Comments** Barbour and Davis say the most conspicuous parasite is the large bat bug, Cimex spp.

#### **References for Animal or Plant Association**

#### **Ref.Id Citation**

- 20 Barbour, R.W., W.H. Davis, 1969, Bats of America, 286 pgs., Univ. Kentucky Press, Lexington, Ky.
- 108 Fenton, M. B., R. M. R. Barclay, 1980, Myotis lucifugus, Mammalian Species, Num. 142, 8 pgs., Am. Soc. Mammal.

#### **USFWS Habitat Evaluation Procedures**

No USFWS Habitat Evaluation Procedures Found

#### References for USFWS Habitat Evaluation Procedures

No References found for USFWS Habitat Evaluation Proceduress.

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# Fish and Wildlife Information Service

# Habitat chapter for Falcon, peregrine (040096)

Habitat: Terrestrial

#### **References for Habitat**

#### Ref.Id Citation

- 435 Bent, A.C., 1938, Life histories of North American birds of prey, Part II. Dover Publishing republication of the 1938 Smithsonian National Museum Bulletin 170, 482 pp. pgs., Dover Publishing, Inc., New York
- 8812 Service, U.S. Fish and Wildlife, 1988, Endangered Species Information System Booklet: American Peregrine Falcon., U.S. Fish and Wildlife Service, ESIS, Arlington, VA
- 9315 Byrd, M. A., R. Cashwell, K. Terwilliger, 1988, Peregrine falcon investigations, Va. nongame and endangered species annual report, pg. 54-74

# **Habitat Forest Size Class**

Code	Forest Size Class	
2	Seedling	
3	Sapling	
4	Seedling/Sapling	

#### **References for Habitat Forest Size**

#### Ref.Id Citation

10777 Hamel, P. B., 1992, The land manager's guide to the birds of the South, Nature Conservancy, 437 pgs.

#### **Habitat Society of American Foresters (SAF)**

SAF Type	Stage Type	Canopy Closuer
02500:Sugar maple-beech-yellow birch	grassforb	0-40%
02500:Sugar maple-beech-yellow birch	shrubseedling	0-40%
02600:Sugar maple-basswood	grassforb	0-40%
02600:Sugar maple-basswood	shrubseedling	0-40%
02700:Sugar maple	grassforb	0-40%
02700:Sugar maple	shrubseedling	0-40%
02800:Black cherry-maple	grassforb	0-40%

02800:Black cherry-maple	shrubseedling	0-40%
03000:Red spruce-yellow birch	grassforb	0-40%
03000:Red spruce-yellow birch	shrubseedling	0-40%
03400:Red spruce-fraser fir	grassforb	0-40%
03400:Red spruce-fraser fir	shrubseedling	0-40%
03401:-fraser fir	grassforb	0-40%
03401:-fraser fir	shrubseedling	0-40%

# **References for Habitat SAF References**

# Ref.Id Citation

10777 Hamel, P. B., 1992, The land manager's guide to the birds of the South, Nature Conservancy, 437 pgs.

# **Habitat Land Use**

Code	Land Use		
10	Urban or Built-up Land		
12	Commercial and Services		
40	Forest Land		
41	Deciduous Forest Land		
42	Evergreen Forest Land		
43	Mixed Forest Land		
50	Water		
55	Chesapeake Bay		
56	Atlantic Ocean Coastal Waters		
60	Wetland		
61	Forested Wetland		
70	Barren Land		
71	Dry Salt Flats		
72	Beaches		
74	Bare, Exposed Rock		
75	Strip Mines, Quarries, and Gravel Pits		
76	Transitional Areas		
77	Mixed Barren Land		

# References for Land Use

**Ref.Id Citation** 

10777 Hamel, P. B., 1992, The land manager's guide to the birds of the South, Nature Conservancy, 437 pgs.

# **Habitat USFWS National Wetland Inventory (NWI)**

No Habitat USFWS NWI Records found.

#### References for USFWS National Wetland Inventory (NWI)

#### Ref.Id Citation

10777 Hamel, P. B., 1992, The land manager's guide to the birds of the South, Nature Conservancy, 437 pgs.

# **Habitat Potential Natural Vegetation (PNV)**

Code	Potential Natural Vegetation	
065	Northern Cordgrass Prairie	
095	Appalachian Oak Forest	
097	Northern Hardwoods	
101	Oak-Hickory-Pine Forest	
103	Southern Floodplain Forest	

## References for Potential Natural Vegetation (PNV)

#### Ref.Id Citation

- 8510 Virginia Society of Ornithology and the, Virginia Dept. of Game and Inland Fisheries, VSO Atlas Committee (Ed.), 1989, The Breeding Bird Atlas Project Handbook and Data, 1984-1989, 20 pgs., VSO
- 8511 Ornithology, Virginia Society of, Teta Kain (Ed.), 1987, Virginia's Birdlife: an Annotated Checklist, Virginia Avifauna Number 3, 127 pgs., VSO

**Habitat Association:** This species is found in terrestrial inland, aquatic and coastal areas \*8812\*. They are presently nesting on artificial platforms on Virginias barrier Islands. They are also, being introduced to mountain cliff sites where they historically breed \*9315\*. Unique habitat also includes bridges/underpasses, utility poles, buildings, fences/hedgerows, farm ponds, standing snags, rocky outcrops, cliffs/ledges and islands \*8812\*. It almost exclusively nests on rocky cliffs of varying sizes (in mountainous areas or river gorges, usually associated with water) or on manmade structures such as unfinished bridge piers, bridges or skyscrapers. Migrant and wintering falcons are well known for frequenting coastal estuaries and intertidal mudflats where they prey heavily on shorebirds and waterfowl \*8812\*.

#### **Animal or Plant Association:**

**Animal or Plant Comments** Mammalian predators rob the nest of eggs and young. Great horned owls prey on nestlings and recently fledged young \*488\*.

#### References for Animal or Plant Association

No References found for Animal or Plant Associations.

#### **USFWS Habitat Evaluation Procedures**

No USFWS Habitat Evaluation Procedures Found

# **References for USFWS Habitat Evaluation Procedures**

No References found for USFWS Habitat Evaluation Proceduress.

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# Fish and Wildlife Information Service

# Habitat chapter for Eagle, bald (040093)

Habitat: Riparian

#### **References for Habitat**

#### Ref.Id Citation

- 2802 VA Dept. of Game and Inland Fisheries, Bald eagle project
- 4285 Virginia Deptartment Game and Inland Fisheries, 1984, Bald eagle investigations, Virginia Non-Game and Endangered Wildlife Investigations, pg. 1-11, Fed. Aid in Wild. Restoration and VA Comm. Game and Inland Fish., VA
- 8814 Service, U.S. Fish and Wildlife, 1988, Endangered Species Information System Booklet: Bald Eagle, U.S. Fish and Wildlife Service, Arlington, VA
- 9286 Terwilliger, K.T., 1991, Virginia's endangered species: Proceedings of a symposium. Coordinated by the Virginia Dept. of Game and Inland Fisheries, Nongame and Endangered Species Program, 672 pp. pgs., McDonald and Woodward Publ. Comp., Blacksburg, VA
- 9551 Cushwa, C. T., 1989, VPI and State University department of fisheries and wildlife sciences annual report, 60 pgs.
- 10777 Hamel, P. B., 1992, The land manager's guide to the birds of the South, Nature Conservancy, 437 pgs.

#### **Habitat Forest Size Class**

Code	Forest Size Class	
5	Pole	
6	Mature	
7	Over Mature	

#### References for Habitat Forest Size

#### **Ref.Id Citation**

- 676 Todd, W.E.C., 1940, Birds of Western Pennsylvania, 710 pgs., Univ. Pittsburgh Press, Pittsburgh, Penn
- 6108 Steenhof, K., S.S. Berlinger, L.H. Fredrickson, 1980, Habitat use by wintering bald eagles in South Dakota, J. Wildl. Manage., Vol. 44(4), pg. 798-805
- 6283 Steenhof, K., 1976, The ecology of wintering bald eagles in southeastern South Dakota., UNPB., Univ. MO, 146 pgs.

#### Habitat Society of American Foresters (SAF)

SAF Type	Stage Type	Canopy Closuer
06100:River birch-sycamore	stages unknown	canopy unknown
07500:Shortleaf pine	young tree	canopy unknown
07500:Shortleaf pine	mature tree	canopy unknown
07600:Shortleaf pine-oak	young tree	canopy unknown
07600:Shortleaf pine-oak	mature tree	canopy unknown
07800:Virginia pine-oak	young tree	canopy unknown
07800:Virginia pine-oak	mature tree	canopy unknown
08000:Loblolly pine-shortleaf pine	young tree	canopy unknown
08000:Loblolly pine-shortleaf pine	mature tree	canopy unknown
08000:Loblolly pine-shortleaf pine	old growth	canopy unknown
08100:Loblolly pine	young tree	canopy unknown
08100:Loblolly pine	mature tree	canopy unknown
08200:Loblolly pine-hardwood	young tree	canopy unknown
08200:Loblolly pine-hardwood	mature tree	canopy unknown
08700:Sweetgum-yellow poplar	young tree	canopy unknown
08700:Sweetgum-yellow poplar	mature tree	canopy unknown
08800:Willow oak-water oak-diamondleaf oak	young tree	canopy unknown
08800:Willow oak-water oak-diamondleaf oak	mature tree	canopy unknown
09100:Swamp chestnut oak-cherrybark oak	young tree	canopy unknown
09100:Swamp chestnut oak-cherrybark oak	mature tree	canopy unknown
09200:Sweetgum-willow oak	young tree	canopy unknown
09200:Sweetgum-willow oak	mature tree	canopy unknown
09400:Sycamore-sweetgum-American elm	stages unknown	canopy unknown
09600:Overcup oak-water hickory	young tree	canopy unknown
09600:Overcup oak-water hickory	mature tree	canopy unknown
10100:Baldcypress	young tree	canopy unknown
10100:Baldcypress	mature tree	canopy unknown
10100:Baldcypress	stages unknown	canopy unknown
10200:Baldcypress-tupelo	young tree	canopy unknown
10200:Baldcypress-tupelo	mature tree	canopy unknown
10300:Water tupelo-swamp tupelo	young tree	canopy unknown

10300:Water tupelo-swamp tupelo	mature tree	canopy unknown
10800:Red maple	young tree	canopy unknown
10800:Red maple	mature tree	canopy unknown

#### **References for Habitat SAF References**

#### **Ref.Id Citation**

- 88 LeGrand, H.E., Jr., Hamel, P.B., 1980, Bird-habitat associations on southeastern forest lands, 276 pgs., Dep. Zool., Clemson Univ., Clemson S.C
- 676 Todd, W.E.C., 1940, Birds of Western Pennsylvania, 710 pgs., Univ. Pittsburgh Press, Pittsburgh, Penn
- 4983 Broley, C.L., 1947, Migration and nesting of Florida bald eagles, Wilson Bull., Vol. 59, pg. 3-20
- 5687 Herrick, F.H., 1924, Nests and nesting habits of the American eagle, Auk, Vol. 41(3), pg. 213-231
- 5796 Lish, J.W., Lewis, J.C., 1975, Status and ecology of bald eagles wintering in Oklahoma, Proc. SE Assoc. Game and Fish Comm., Vol. 29, pg. 415-423
- 6100 Stalmaster, M.V, Newman, J.R., 1979, Perch-site preferences of wintering bald eagles in northwest Washington., J. Wildl. Manage., Vol. 42(1), pg. 221-224
- 6108 Steenhof, K., S.S. Berlinger, L.H. Fredrickson, 1980, Habitat use by wintering bald eagles in South Dakota, J. Wildl. Manage., Vol. 44(4), pg. 798-805
- 6283 Steenhof, K., 1976, The ecology of wintering bald eagles in southeastern South Dakota., UNPB., Univ. MO, 146 pgs.

#### **Habitat Land Use**

Habitat Land Use		
Code	Land Use	
20	Agricultural Land	
21	Cropland and Pasture	
30	Rangeland	
31	Herbaceous Rangeland	
32	Shrub and Brush Rangeland	
33	Mixed Rangeland	
40	Forest Land	
41	Deciduous Forest Land	
42	Evergreen Forest Land	
43	Mixed Forest Land	
50	Water	
51	Streams and Canals	
52	Lakes	
53	Reservoirs	

54	Bays and Estuaries
55	Chesapeake Bay
56	Atlantic Ocean Coastal Waters
60	Wetland
61	Forested Wetland
62	Nonforested Wetland
70	Barren Land
72	Beaches
77	Mixed Barren Land

#### References for Land Use

#### Ref.Id Citation

- 88 LeGrand, H.E., Jr., Hamel, P.B., 1980, Bird-habitat associations on southeastern forest lands, 276 pgs., Dep. Zool., Clemson Univ., Clemson S.C
- 4983 Broley, C.L., 1947, Migration and nesting of Florida bald eagles, Wilson Bull., Vol. 59, pg. 3-20
- 4987 Brooks, A., 1922, Notes on the abundance and habits of the bald eagle in British Columbia, Auk, Vol. F39, pg. 556-559
- 5882 Munro, J.A., 1938, The northern bald eagle in British Columbia, Wilson Bull., Vol. 50, pg. 28-35
- 6089 Southern, W.E., 1963, Winter populations, behavior, and seasonal dispersal of bald eagles in northwestern Illinois., Wilson Bull., Vol. 75, pg. 42-55
- 6108 Steenhof, K., S.S. Berlinger, L.H. Fredrickson, 1980, Habitat use by wintering bald eagles in South Dakota, J. Wildl. Manage., Vol. 44(4), pg. 798-805
- 6136 Swisher, J.F., 1964, A roosting area of the bald eagle in northern Utah., Wilson Bull., Vol. 76(2), pg. 186-187
- 8812 Service, U.S. Fish and Wildlife, 1988, Endangered Species Information System Booklet: American Peregrine Falcon., U.S. Fish and Wildlife Service, ESIS, Arlington, VA

#### Habitat USFWS National Wetland Inventory (NWI)

No Habitat USFWS NWI Records found.

# References for USFWS National Wetland Inventory (NWI)

#### Ref.Id Citation

8814 Service, U.S. Fish and Wildlife, 1988, Endangered Species Information System Booklet: Bald Eagle, U.S. Fish and Wildlife Service, Arlington, VA

#### **Habitat Potential Natural Vegetation (PNV)**

Code	Potential Natural Vegetation	
065	Northern Cordgrass Prairie	
095	Appalachian Oak Forest	

097	Northern Hardwoods
101	Oak-Hickory-Pine Forest
103	Southern Floodplain Forest

#### **References for Potential Natural Vegetation (PNV)**

#### **Ref.Id Citation**

- 4285 Virginia Deptartment Game and Inland Fisheries, 1984, Bald eagle investigations, Virginia Non-Game and Endangered Wildlife Investigations, pg. 1-11, Fed. Aid in Wild. Restoration and VA Comm. Game and Inland Fish., VA
- Virginia Society of Ornithology and the, Virginia Dept. of Game and Inland Fisheries, VSO Atlas Committee (Ed.), 1989, The Breeding Bird Atlas Project Handbook and Data, 1984-1989, 20 pgs., VSO
- 9292 Byrd, M. A., W. H. Taylor, D. O. Wallin, 1985, Bald eagle investigations, Nongame and endangered species annual report, pg. 1-16
- 9296 Byrd, M. A., D. Bradshaw, 1989, Personal Communication (transfer of nest and roost sites to quad overlay sheets. June 22, 1989)

**Habitat Association:** This species prefers coasts, lakes and rivers, and is seen along mountain ridges in migration \*2802\*. The James, Rappahannock, and Potomac Rivers provide one of the most important eagle habitats in the state \*4285\*. Most nest sites are found in the midst of large wooded areas adjacent to marshes or bodies of water, or in isolated trees located in marshes, on farmland, or in logged over areas where scattered seed trees remain. Most eagle nests are less than 1.6 km from feeding areas, but some nests are between 1.6 and 3.2 km from the primary food sources \*9551\*. Pines are often the prefered nest trees in the eastern United States but oaks and other hardwoods are also used in the Chesapeake Bay area. Wintering areas have many of the same characteristics as the nest sites. Roost sites are important in wintering areas. Their habitat usually occurs in undeveloped areas with little human activity \*8814\*.

Animal or Plant Association: Diseases and Parasites:; Bacterial: Cholera \*1951,1955,1956\*; Botulism \*1932\*; Fungal: Aspergillosis \*1937,2048\*; Helminths: Acanthocephala \*1761,1780\*; Nematodes \*1780\*; Trematodes \*1780,2022\*; Protozoan: Blood parasites \*1780,1723,1989\*; Coccidia: Sarcocystis \*1758\*; Trichomoniosis \*1678,1726\*; Ectoparasites \*1913\*; Lice \*1780\*; Poison \*1978,1740\*; Miscellaneous \*1905\*

Animal or Plant Comments General references for diseases and parasites include \*1902,1758,8852\*.

#### References for Animal or Plant Association

#### Ref.Id Citation

- 1678 Rettig, T., 1978, Trichomoniasis in a bald eagle (Haliaeetus leucocophalus). Diagnosis and successful treatment with Dimetridazole, J. Zoo Anim. Med., Vol. 9(3), pg. 98-100
- 1723 Greiner, E.C., D.J. Black, W.O. Iverson, 1981, Plasmodium in a bald eagle (Haliaeetus leucocephalus) in Florida, J. Wildl. Dis., Vol. 17(4), pg. 555-558
- 1726 Stone, W.B., Nye, P.E., 1981, Trichomoniasis in bald eagles, Wilson Bull., Vol. 93(1), pg. 109
- 1740 Zinkl, J.G., Hoff, G.L., Davis, J.W. (Ed.), 1982, Polychlorinated biphenyl (PCB) compounds, Noninfectious Diseases of Wildlife, pg. 31-37, Iowa State University Press, Ames, Iowa

1758

- Cooper, J.E., A.G. Greenwood, 1980, Recent advances in the study of raptor diseases. Proceedings of the International Symposium on Diseases of Birds of Prey, 178 pgs., Chiron Publications, Ltd., West Yorkshire, England
- 1761 Nickol, B.B., Kocan, A., 1982, Andracantha megri: (Acanthocephala: polymorphidae) from American bald eagles, Haliaeetus leucocephalus, J. Parasitol., Vol. 68(1), pg. 168-169
- 1780 Tuggle, B.N., Schmeling, S.K., 1982, Parasites of the bald eagle (Haliaeetus leucocephalus) of North America, J. Wildl. Dis., Vol. 18(4), pg. 501-506
- 1902 Halliwell, W.H., Fowler, M.E. (Ed.), 1978, Raptors (Falconiformes and Strigiformes), Zoo and Wild Animal Medicine, pg. 221-290, W.B. Saunders Co., Philidelphia
- 1905 Coon, N.C., L.N. Locke, E. Cromartie, W.L. Reichel, 1970, Causes of bald eagle mortality, 1960-1965, J. Wildl. Dis., Vol. 6, pg. 72-76
- 1913 Peters, H.S., 1936, A list of external parasites from birds of the eastern part of the United States, Bird-Banding, Vol. 7, pg. 9-27
- 1932 Stuht, J., Fay, L.D., 1979, Botulism in a bald eagle, Mich. Dep. Nat. Resour. Wildl. Div. Rep. no. 2822, 1 pgs.
- 1937 Coon, N.C., L.N. Locke, 1968, Aspergillosis in a bald eagle (Haliaeetus leucocephalus), Bull. Wildl. Dis. Assoc., Vol. 4, pg. 51
- 1951 Locke, L.N., Newman, J.A., Mulhern, B.M., 1972, Avian cholera in a bald eagle from Ohio, Ohio J. Sci., Vol. 72, pg. 294-296
- 1955 Rosen, M.N., Morse, E.E., 1959, An interspecies chain in a fowl cholera epizootic, Calif. Fish and Game, Vol. 45, pg. 51-56
- 1956 Rosen, M.N., 1972, The 1970-1971 avian cholera epornitic's impact on certain species, J. Wildl. Dis., Vol. 8, pg. 75-78
- 1978 Stickel, L.F., 1966, Bald eagle pesticide relations, Trans. 31st N. Am. Wildlife and Nat. Res. Conf., Washington, D.C., pg. 190-204
- 1989 Williams, N.A., G.F. Bennett, 1978, Hematozoa of some birds of New Jersey and Maryland, Can. J. Zool., Vol. 56, pg. 596-603
- 2022 Smith, H.J., 1978, Cryptocotyle lingua infection in a bald eagle (Haliaeetus leucocephalus), J. Wildl. Dis., Vol. 14, pg. 163-164
- 2048 O'Meara, D.C., Witter, J.F., Davis, J.W., Anderson, R.C., Karstad, L., Trainer, D.O. (Ed.), 1971, Aspergillosis, Infectious and Parasitic Diseases of Wild Birds, pg. 153-162, The Iowa State University, Ames, Iowa

# **USFWS Habitat Evaluation Procedures**

No USFWS Habitat Evaluation Procedures Found

#### **USFWS Habitat Evaluation Procedure Comments**

Two quantitative models were designed to evaluate nesting habitat for bald eagles in Maine and offer a quantitative means of determining the potential of a site as bald eagle nesting habitat in Maine \*8808\*.

# **References for USFWS Habitat Evaluation Procedures**

## Ref.Id Citation

8808 Livingston, S.A., 1987, Nesting habitat models for bald eagles in Maine., 74 pgs., Univ. Maine-Orono, Orono, ME

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# Fish and Wildlife Information Service

# Habitat chapter for Sandpiper, upland (040129)

Habitat: Riparian

#### **References for Habitat**

#### **Ref.Id Citation**

541 Johnsgard, P.A., 1981, The Plovers, Sandpipers, and Snipes of the World, 493 pgs., Univ. Nebrasks Press, Lincoln, NB

#### **Habitat Forest Size Class**

Code	Forest Size Class
1	Unstocked

#### **References for Habitat Forest Size**

#### Ref.Id Citation

88 LeGrand, H.E., Jr., Hamel, P.B., 1980, Bird-habitat associations on southeastern forest lands, 276 pgs., Dep. Zool., Clemson Univ., Clemson S.C

10777 Hamel, P. B., 1992, The land manager's guide to the birds of the South, Nature Conservancy, 437 pgs.

#### **Habitat Society of American Foresters (SAF)**

Stage Type	Canopy Closuer
grassforb	0-40%
shrubseedling	0-40%
grassforb	0-40%
shrubseedling	0-40%
grassforb	0-40%
shrubseedling	0-40%
grassforb	0-40%
shrubseedling	0-40%
grassforb	0-40%
shrubseedling	0-40%
grassforb	0-40%
	grassforb shrubseedling grassforb shrubseedling grassforb shrubseedling grassforb shrubseedling grassforb shrubseedling

04404:-chestnut oak-black oak-scarlet oak	shrubseedling	0-40%
04405:-chestnut oak-yellow poplar	grassforb	0-40%
04405:-chestnut oak-yellow poplar	shrubseedling	0-40%
04406:-chestnut oak-pitch pine	grassforb	0-40%
04406:-chestnut oak-pitch pine	shrubseedling	0-40%
04500:Pitch pine	grassforb	0-40%
04500:Pitch pine	shrubseedling	0-40%
04504:-pitch pine-shortleaf pine	grassforb	0-40%
04504:-pitch pine-shortleaf pine	shrubseedling	0-40%
04505:-pitch pine-scarlet oak	grassforb	0-40%
04505:-pitch pine-scarlet oak	shrubseedling	0-40%
04506:-pitch pine-black oak	grassforb	0-40%
04506:-pitch pine-black oak	shrubseedling	0-40%
04507:-pitch pine-chestnut oak	grassforb	0-40%
04507:-pitch pine-chestnut oak	shrubseedling	0-40%
04600:Eastern redcedar	grassforb	0-40%
04600:Eastern redcedar	shrubseedling	0-40%
04601:-eastern redcedar-pine	grassforb	0-40%
04601:-eastern redcedar-pine	shrubseedling	0-40%
04602:-eastern redcedar-hardwood	grassforb	0-40%
04602:-eastern redcedar-hardwood	shrubseedling	0-40%
04603:-eastern redcedar-pine-hardwood	grassforb	0-40%
04603:-eastern redcedar-pine-hardwood	shrubseedling	0-40%
05000:Black locust	grassforb	0-40%
05000:Black locust	shrubseedling	0-40%
05100:White pine-chestnut oak	grassforb	0-40%
05100:White pine-chestnut oak	shrubseedling	0-40%
05101:-chestnut oak-white pine-red oak	grassforb	0-40%
05101:-chestnut oak-white pine-red oak	shrubseedling	0-40%
05200:White oak-black oak-northern red oak	grassforb	0-40%
05200:White oak-black oak-northern red oak	shrubseedling	0-40%
05201:-white oak-northern red oak	grassforb	0-40%

05201:-white oak-northern red oak	shrubseedling	0-40%
05202:-white oak-black oak	grassforb	0-40%
05202:-white oak-black oak	shrubseedling	0-40%
05203:-white oak-scarlet oak	grassforb	0-40%
05203:-white oak-scarlet oak	shrubseedling	0-40%
05204:-white oak-black oak-chestnut oak	grassforb	0-40%
05204:-white oak-black oak-chestnut oak	shrubseedling	0-40%
05205:-white oak-southern red oak	grassforb	0-40%
05205:-white oak-southern red oak	shrubseedling	0-40%
05206:-black oak-red oak	grassforb	0-40%
05206:-black oak-red oak	shrubseedling	0-40%
05207:-black oak-scarlet oak	grassforb	0-40%
05207:-black oak-scarlet oak	shrubseedling	0-40%
05208:-black oak-scarlet oak-chestnut oak	grassforb	0-40%
05208:-black oak-scarlet oak-chestnut oak	shrubseedling	0-40%
05209:-scarlet oak	grassforb	0-40%
05209:-scarlet oak	shrubseedling	0-40%
05210:-scarlet oak-chestnut oak	grassforb	0-40%
05210:-scarlet oak-chestnut oak	shrubseedling	0-40%
05211:-hickory-oak	grassforb	0-40%
05211:-hickory-oak	shrubseedling	0-40%
05212:-scarlet oak-pitch pine	grassforb	0-40%
05212:-scarlet oak-pitch pine	shrubseedling	0-40%
05300:White oak	grassforb	0-40%
05300:White oak	shrubseedling	0-40%
05500:Northern red oak	grassforb	0-40%
05500:Northern red oak	shrubseedling	0-40%
05501:-northern red oak-chestnut oak	grassforb	0-40%
05501:-northern red oak-chestnut oak	shrubseedling	0-40%
06000:Beech-sugar maple	grassforb	0-40%
06000:Beech-sugar maple	shrubseedling	0-40%
07600:Shortleaf pine-oak	grassforb	0-40%

07600:Shortleaf pine-oak	shrubseedling	0-40%
07800:Virginia pine-oak	grassforb	0-40%
07800:Virginia pine-oak	shrubseedling	0-40%
07900:Virginia pine	grassforb	0-40%
07900:Virginia pine	shrubseedling	0-40%
08000:Loblolly pine-shortleaf pine	grassforb	0-40%
08000:Loblolly pine-shortleaf pine	shrubseedling	0-40%
08100:Loblolly pine	grassforb	0-40%
08100:Loblolly pine	shrubseedling	0-40%
08200:Loblolly pine-hardwood	grassforb	0-40%
08200:Loblolly pine-hardwood	shrubseedling	0-40%
11000:Black oak	grassforb	0-40%
11000:Black oak	shrubseedling	0-40%

## **References for Habitat SAF References**

#### **Ref.Id Citation**

- 88 LeGrand, H.E., Jr., Hamel, P.B., 1980, Bird-habitat associations on southeastern forest lands, 276 pgs., Dep. Zool., Clemson Univ., Clemson S.C
- 10777 Hamel, P. B., 1992, The land manager's guide to the birds of the South, Nature Conservancy, 437 pgs.

#### **Habitat Land Use**

Code	Land Use
10	Urban or Built-up Land
14	Transportation, communications, and Utilities
20	Agricultural Land
21	Cropland and Pasture
24	Other Agricultural Land
30	Rangeland
31	Herbaceous Rangeland
70	Barren Land
73	Sandy Areas other than Beaches

#### References for Land Use

#### **Ref.Id Citation**

- 88 LeGrand, H.E., Jr., Hamel, P.B., 1980, Bird-habitat associations on southeastern forest lands, 276 pgs., Dep. Zool., Clemson Univ., Clemson S.C
- 432 Bent, A.C., 1962, Life histories of North American shore birds, Part I. Dover Publishing republication of the 1927 Smithsonian National Museum Bulletin 142, 359 pp. pgs., Dover Publishing, Inc., New York
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- 541 Johnsgard, P.A., 1981, The Plovers, Sandpipers, and Snipes of the World, 493 pgs., Univ. Nebrasks Press, Lincoln, NB
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- 619 Reed, C.A., 1965, North American Bird Eggs, 372 pgs., Dover Publ., Inc., New York, N.Y.
- 676 Todd, W.E.C., 1940, Birds of Western Pennsylvania, 710 pgs., Univ. Pittsburgh Press, Pittsburgh, Penn
- 1082 Soothill, E., Soothill, R., 1982, Wading Birds of the World, pg. 232-233, Blandford Press, Puole and Dorset, England
- 10938 Schneider, K.J., and D.M. Pence, eds., 1992, Migratory nongame birds of management concern in the Northeast., 400 pgs., U.S. Dep. Inter., Fish and Wildlife Service, Newton Corner, Massachusetts

# **Habitat USFWS National Wetland Inventory (NWI)**

No Habitat USFWS NWI Records found.

#### References for USFWS National Wetland Inventory (NWI)

#### Ref.Id Citation

10777 Hamel, P. B., 1992, The land manager's guide to the birds of the South, Nature Conservancy, 437 pgs.

#### Habitat Potential Natural Vegetation (PNV)

Code	Potential Natural Vegetation
065	Northern Cordgrass Prairie
095	Appalachian Oak Forest
101	Oak-Hickory-Pine Forest
103	Southern Floodplain Forest

#### References for Potential Natural Vegetation (PNV)

#### Ref.Id Citation

- 4325 Dierker, W.W., 1979, Birds of the Hannibal, Missouri area, Trans. Missouri Acad. Sci, Vol. 13, pg. 41-51
- 4326 Heye, P.L., 1975, A preliminary list of the birds of the Cape Girardeau, Missouri area, SE Missouri State Univ., Cape Girardeau, MO

- 4469 Fredrickson, L.H., Personal communication
- 4473 Wilson, J.D., Breeding bird survey
- 4498 Service, U. S. Fish and Wildlife, Welcome to Swan Lake National Wildlife Refuge, National Wildlife Refuge Pamphlet, U.S. Fish and Wildlife Service
- 4690 Nordstrom, G.R., Pflieger, W.L., Sadler, K.C., LEWIS, W.H., 1977, Rare & Endangered Species of Missouri, 129 pgs., Mo.Dept. Conservation & USDA Soil Conservation Service
- 8510 Virginia Society of Ornithology and the, Virginia Dept. of Game and Inland Fisheries, VSO Atlas Committee (Ed.), 1989, The Breeding Bird Atlas Project Handbook and Data, 1984-1989, 20 pgs., VSO
- 8511 Ornithology, Virginia Society of, Teta Kain (Ed.), 1987, Virginia's Birdlife: an Annotated Checklist, Virginia Avifauna Number 3, 127 pgs., VSO
- 10938 Schneider, K.J., and D.M. Pence, eds., 1992, Migratory nongame birds of management concern in the Northeast., 400 pgs., U.S. Dep. Inter., Fish and Wildlife Service, Newton Corner, Massachusetts

**Habitat Association:** Breeds open pastures or grassy fields, often hayfields of alfalfa or clover, occasionally opening in forest. Hayfields and old pastures are favored nesting habitat also \*2871\*. Needs extensive grass areas (10-15ac) with grasses being 1-3ft. high \*10777\*.

**Animal or Plant Association:** ; 88

#### **Animal or Plant Comments**

#### References for Animal or Plant Association

No References found for Animal or Plant Associations.

#### **USFWS Habitat Evaluation Procedures**

No USFWS Habitat Evaluation Procedures Found

#### **References for USFWS Habitat Evaluation Procedures**

No References found for USFWS Habitat Evaluation Proceduress.

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1/6/2014 7:52:37 PM

# Fish and Wildlife Information Service

# Habitat chapter for Shrike, loggerhead (040293)

Habitat: Terrestrial

## **References for Habitat**

#### Ref.Id Citation

- 618 Pough, R.H., 1949, Audubon Land Bird Guide, 312 pgs., Doubleday and Co., Garden City, N.Y
- 676 Todd, W.E.C., 1940, Birds of Western Pennsylvania, 710 pgs., Univ. Pittsburgh Press, Pittsburgh, Penn
- 691 Via, J.W., Linzey, D.W. (Ed.), 1979, Loggerhead shrike from the Proceedings of the Symposium on Endangered and Threatened Plants and Animals of Virginia, pg. 440-441, Extension Div, VA Tech, Blacksburg, VA
- 706 Warren, B.H., 1890, Birds of Pennsylvania, 434 pgs., Commonwealth of Pennsylvania, Penn
- 9298 Luukkonen, D. R., 1987, Status and breeding ecology of the loggerhead shrike in Virginia, M.S.Thesis VPI & SU, 78 pgs.
- 9580 Loehle, C., Osteen, R., 1990, Impact: an expert system for environmental impact assessment, Envir. Impact Assessment, Vol. 4, Num. 1, pg. 35-43
- 10777 Hamel, P. B., 1992, The land manager's guide to the birds of the South, Nature Conservancy, 437 pgs.
- 11627 Day, H. F., III, 2001, Personal Communication, Expert Review for GAP Analysis Project

#### **Habitat Forest Size Class**

Code	Forest Size Class
1	Unstocked
3	Sapling
4	Seedling/Sapling
5	Pole
6	Mature
7	Over Mature

#### **References for Habitat Forest Size**

#### **Ref.Id Citation**

10777 Hamel, P. B., 1992, The land manager's guide to the birds of the South, Nature Conservancy, 437 pgs.

11101

VA Dept. of Game and Inland Fisheries, 1991, Loggerhead shrike recovery plan, Draft, 28 pp. pgs., Nongame and Endangered Species Program, VDGIF, Richmond, VA

### Habitat Society of American Foresters (SAF)

No Habitat SAF found.

### References for Habitat SAF References

### Ref.Id Citation

- 10777 Hamel, P. B., 1992, The land manager's guide to the birds of the South, Nature Conservancy, 437 pgs.
- 11101 VA Dept. of Game and Inland Fisheries, 1991, Loggerhead shrike recovery plan, Draft, 28 pp. pgs., Nongame and Endangered Species Program, VDGIF, Richmond, VA

### **Habitat Land Use**

Code	Land Use
10	Urban or Built-up Land
11	Residential
20	Agricultural Land
21	Cropland and Pasture
22	Orchards, Groves, Vineyards, Nurseries, and Ornamental Horticult
30	Rangeland
31	Herbaceous Rangeland
32	Shrub and Brush Rangeland
33	Mixed Rangeland
40	Forest Land
41	Deciduous Forest Land
42	Evergreen Forest Land
43	Mixed Forest Land

### References for Land Use

### Ref.Id Citation

11101 VA Dept. of Game and Inland Fisheries, 1991, Loggerhead shrike recovery plan, Draft, 28 pp. pgs., Nongame and Endangered Species Program, VDGIF, Richmond, VA

### **Habitat USFWS National Wetland Inventory (NWI)**

No Habitat USFWS NWI Records found.

### References for USFWS National Wetland Inventory (NWI)

No References found for USFWS National Wetland Inventory (NWI)s.

### Habitat Potential Natural Vegetation (PNV)

Code	Potential Natural Vegetation	
065	Northern Cordgrass Prairie	
095	Appalachian Oak Forest	
097	Northern Hardwoods	
101	Oak-Hickory-Pine Forest	
103	Southern Floodplain Forest	

### **References for Potential Natural Vegetation (PNV)**

### Ref.Id Citation

- 8510 Virginia Society of Ornithology and the, Virginia Dept. of Game and Inland Fisheries, VSO Atlas Committee (Ed.), 1989, The Breeding Bird Atlas Project Handbook and Data, 1984-1989, 20 pgs., VSO
- 8886 Luukkonen, D.R., Fraser, J.D., 1987, Status and distribution of the loggerhead shrike in Virginia., Virginia J. Sci., Vol. 38, Num. 4, pg. 342-350
- 10949 Virginia Department of Game and Inland Fisheries, 1995, Collections Database

**Habitat Association:** This species prefers areas of grassland that are grazed or mowed occasionally to keep the grass short. An abundance of perching sites, such as fences, woody vegetation or hedgerows is also important. This species usually nests in eastern redcedar or hawthorne \*691,9298\*. During periods of cold or snow cover, shrikes sometimes move from hedgrow habitats to woodlots Though in woodlots, losses to the shrike population may occur due to excessive predation by raptors \*9580,11627\*. Thorny shrubs are favored as nest sites \*107777\*.

### Animal or Plant Association:

### **Animal or Plant Comments**

### **References for Animal or Plant Association**

No References found for Animal or Plant Associations.

### **USFWS Habitat Evaluation Procedures**

No USFWS Habitat Evaluation Procedures Found

### **References for USFWS Habitat Evaluation Procedures**

No References found for USFWS Habitat Evaluation Proceduress.

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# U.S. Fish and Wildlife Service National Wetlands Inventory

# **Central Forensics Laboratory**



June 30, 2016

Estuarine and Marine Deepwater

pwater [

Freshwater Forested/Shrub Wetland



Other

Estuarine and Marine Wetland

Freshwater Emergent Wetland



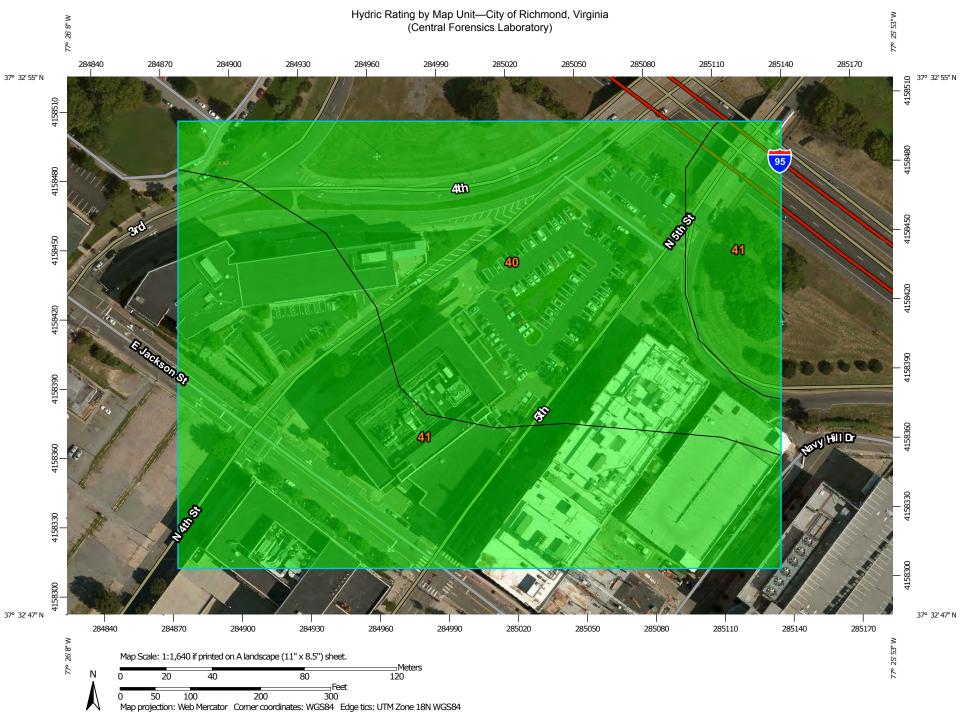
Freshwater Pond

Lake



Riverine

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.



### MAP LEGEND

### Area of Interest (AOI) Transportation Area of Interest (AOI) Rails Soils Interstate Highways Soil Rating Polygons **US Routes** Hydric (100%) Major Roads Hydric (66 to 99%) Local Roads $\sim$ Hydric (33 to 65%) Background Hydric (1 to 32%) Aerial Photography Not Hydric (0%) Not rated or not available Soil Rating Lines Hydric (100%) Hydric (66 to 99%) Hydric (33 to 65%) Hydric (1 to 32%) Not Hydric (0%) Not rated or not available Soil Rating Points Hydric (100%) Hydric (66 to 99%) Hydric (33 to 65%) Hydric (1 to 32%) Not Hydric (0%) Not rated or not available **Water Features** Streams and Canals

### MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: City of Richmond, Virginia Survey Area Data: Version 12, Dec 11, 2013

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Aug 31, 2013—Oct 1, 2013

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

# **Hydric Rating by Map Unit**

Hydric Rating by Map Unit— Summary by Map Unit— City of Richmond, Virginia (VA760)							
Map unit symbol	Map unit symbol Map unit name Rating Acres in AOI Percent of AOI						
40	Udorthents-Dumps complex, pits	0	5.5	43.7%			
41	Urban land	0	7.1	56.3%			
Totals for Area of Interest			12.6	100.0%			

### Description

This rating indicates the percentage of map units that meets the criteria for hydric soils. Map units are composed of one or more map unit components or soil types, each of which is rated as hydric soil or not hydric. Map units that are made up dominantly of hydric soils may have small areas of minor nonhydric components in the higher positions on the landform, and map units that are made up dominantly of nonhydric soils may have small areas of minor hydric components in the lower positions on the landform. Each map unit is rated based on its respective components and the percentage of each component within the map unit.

The thematic map is color coded based on the composition of hydric components. The five color classes are separated as 100 percent hydric components, 66 to 99 percent hydric components, 33 to 65 percent hydric components, 1 to 32 percent hydric components, and less than one percent hydric components.

In Web Soil Survey, the Summary by Map Unit table that is displayed below the map pane contains a column named 'Rating'. In this column the percentage of each map unit that is classified as hydric is displayed.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). Under natural conditions, these soils are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 2002). These criteria are used to identify map unit components that normally are associated with wetlands. The criteria used are selected estimated soil properties that are described in "Soil Taxonomy" (Soil Survey Staff, 1999) and "Keys to Soil Taxonomy" (Soil Survey Staff, 2006) and in the "Soil Survey Manual" (Soil Survey Division Staff, 1993).

If soils are wet enough for a long enough period of time to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils are specified in "Field Indicators of Hydric Soils in the United States" (Hurt and Vasilas, 2006).

### References:

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18.

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service. U.S. Department of Agriculture Handbook 436.

Soil Survey Staff. 2006. Keys to soil taxonomy. 10th edition. U.S. Department of Agriculture, Natural Resources Conservation Service.

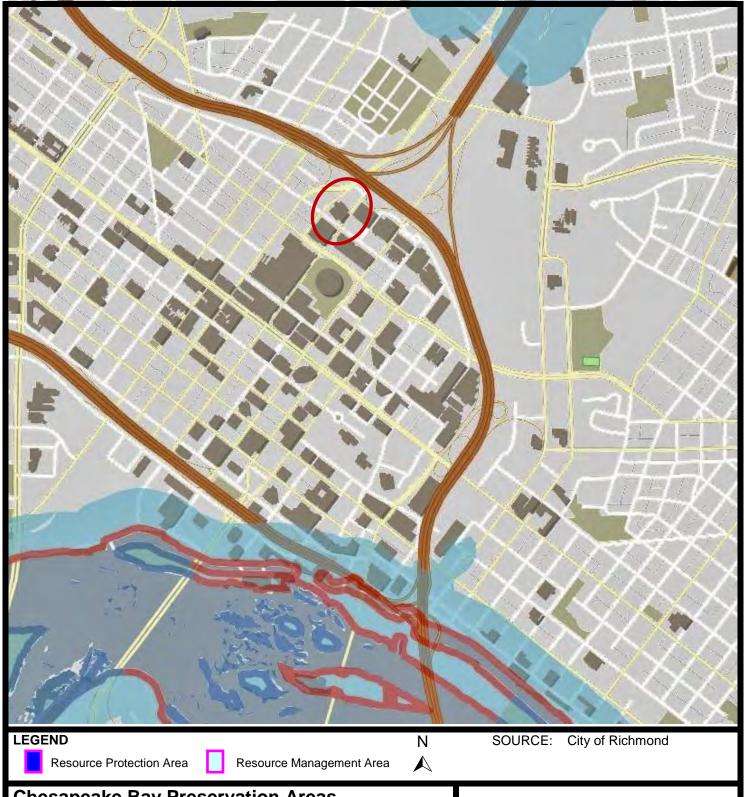
# **Rating Options**

Aggregation Method: Percent Present

Component Percent Cutoff: None Specified

Tie-break Rule: Lower





# **Chesapeake Bay Preservation Areas**

Client Department Forensic Science / Office Chief Medical Examiner

Project Central Forensics Laboratory

Location 700 North Fifth Street
Project Environmental Impact Report

SCALE:

[not shown]

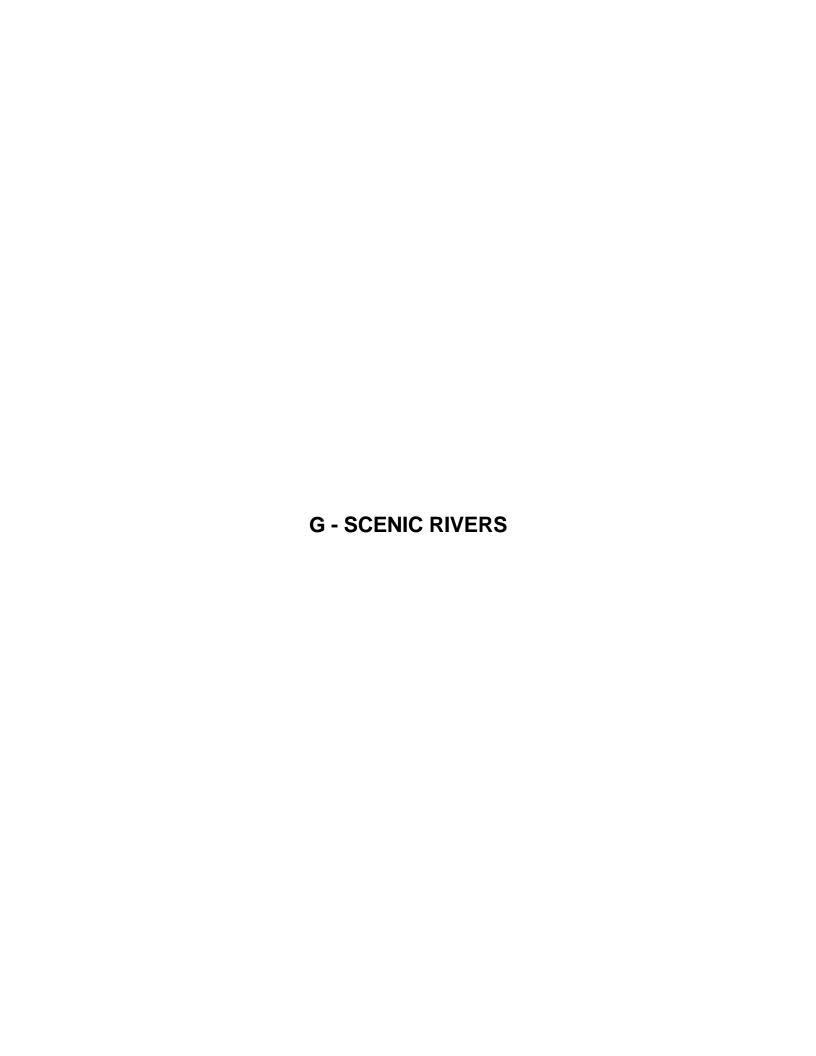
DAA NO.

R16388R



DESIGNED DRAWN CHECKED DATE LNF BHH LNF 07-01-16 FIGURE **E1** 

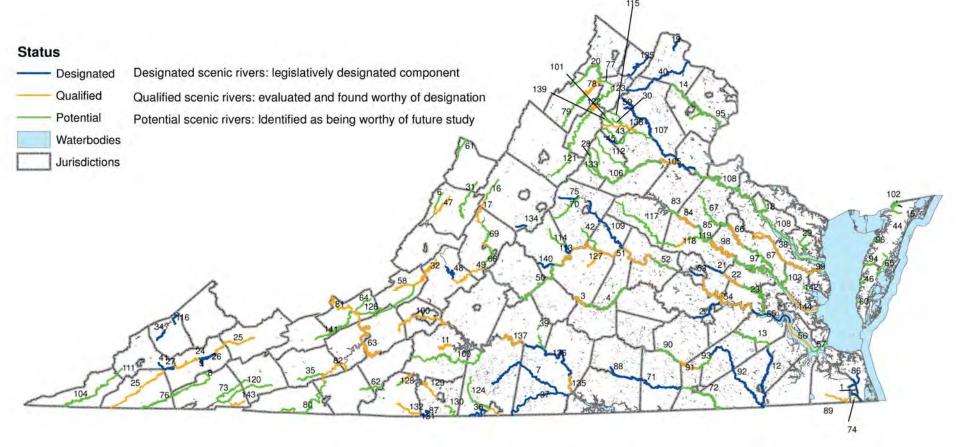




# RIVER MILEAGE CLASSIFICATIONS FOR COMPONENTS OF THE NATIONAL WILD AND SCENIC RIVERS SYSTEM

**SEPTEMBER 2012** (Page 10 of 25)

River	Administering	Miles	Miles by Classification		
Present Units in the National System	Agency	Wild	Scenic	Rec'l	Total Miles
66. White Salmon, Washington (P.L. 99-663—November 17, 1986)	Forest Service	-	7.7	_	7.7
White Salmon, Washington (P.L. 109-44—August 2, 2005)	Forest Service	6.7	13.3	_	20.0
	White Salmon River Total	6.7	21.0	_	27.7
67. Merced, California (P.L. 100-149—November 2, 1987)	Forest Service National Park Service Bureau of Land Management	15.0 53.0 3.0	2.0 14.0 -	12.5 14.0 1.0	29.5 81.0 4.0
Merced, California (P.L. 102-432—October 23, 1992)	Bureau of Land Management	_	_	8.0	8.0
	Merced River Total	71.0	16.0	35.5	122.5
68. Kings, California (P.L. 100-150—November 3, 1987)	Forest Service National Park Service	16.5 49.0	- -	9.0 6.5	25.5 55.5
	Kings River Total	65.5	-	15.5	81.0
69. Kern, California (P.L. 100-174—November 24, 1987)	Forest Service National Park Service	96.1 27.0	7.0 _	20.9	124.0 27.0
	Kern River Total	123.1	7.0	20.9	151.0
70. Bluestone, West Virginia (P.L. 100-534—October 26, 1988)	National Park Service	_	10.0	-	10.0
71. Wildcat, New Hampshire (P.L. 100-554—October 28, 1988)	Forest Service	_	13.7	0.8	14.5



NUM	NAME	STATUS
1	Alton's Creek	Qualified
2	Appomattox River	Designated
3	Appomattox River	Qualified
4	Appomattox River	Potential
5	Back Creek	Qualified
6	Back Creek	Potential
7	Banister River	Designated
8	Big Brumley Creek	Potential
9	Big Cedar Creek	Designated
10	Big Reed Island Creek	Qualified
11	Blackwater River	Qualified
12	Blackwater River	Designated
13	Blackwater River	Potential
14	Bull Run	Potential
15	Bullbegger Creek	Potential
16	Calfpasture River	Potential
17	Calfpasture River	Qualified
18	Cat Point Creek	Potential
19	Catoctin Creek	Designated
20	Cedar Creek	Potential

NUM	NAME	STATUS
22	Chickahominy River	Qualified
23	Chickahominy River	Potential
24	Clinch River	Qualified
25	Clinch River	Qualified
26	Clinch River	Designated
27	Clinch River	Designated
28	Conway River	Potential
29	Corrotoman River	Potential
30	Covington River	Potential
31	Cowpasture River	Potential
32	Craig Creek	Qualified
33	Craig Creek	Potential
34	Cranes Nest River	Designated
35	Cripple Creek	Potential
36	Dan River	Designated
37	Dan River	Designated
38	Dragon Run	Qualified
39	Falling River	Potential
40	Goose Creek	Designated
41	Guest River	Designated
42	Hardware River	Potential

NUM	NAME	STATUS	
43	Hazel River	Potential	
44	Holdens Creek	Potential	
45	Hughes River	Designated	
46	Hungars Creek	Potential	
47	Jackson River	Qualified	
48	James River	Qualified	
49	James River	Potential	
50	James River	Qualified	
51	James River	Potential	
52	James River	Designated	
53	James River	Designated	
54	James River	Qualified	
55	James River	Designated	
56	James River	Qualified	
57	James River	Potential	
58	Johns Creek	Qualified	
59	Jordan River	Designated	
60	Kings Creek	Potential	
61	Laurel Fork	Potential	
62	Laurel Fork	Potential	
63	Little River	Qualified	

64	Little Stony River	Potential	
65	Machipongo River	Potential	
66	Mattaponi River	Qualified	
67	Mattaponi River	Potential	
68	Maury River	Potential	
69	Maury River	Qualified	
70	Mechums River	Potential	
71	Meherrin River	Designated	
72	Meherrin River	Potential	
73	Middle Fork Holston River	Potential	
74	Milldam Creek	Qualified	
75	Moormans River	Designated	
76	N. Fork Holston River	Potential	
77	N. Fork Shenandoah River	Potential	
78	N. Fork Shenandoah River	Qualified	
79	N. Fork Shenandoah River	Potential	
80	New River	Potential	
81	New River	Qualified	
82	New River	Qualified	
83	North Anna River	Potential	
84	North Anna River	Qualified	

NUM	NAME	STATUS
85	North Anna River	Potential
86	North Landing River	Designated
87	North Mayo River	Designated
88	North Meherrin River	Designated
89	Northwest River	Qualified
90	Nottoway River	Potential
91	Nottoway River	Qualified
92	Nottoway River	Designated
93	Nottoway River	Potential
94	Occohannock Creek	Potential
95	Occoquan River	Potential
96	Onancock Creek	Potential
97	Pamunkey River	Potential
98	Pamunkey River	Qualified
99	Piankatank River	Qualified
100	Pigg River	Potential
101	Piney River	Potential
102	Pitts Creek	Potential
103	Poropotank River	Potential
104	Powell River	Potential
105	Rapidan River	Qualified

NUM	NAME	STATUS
106	Rapidan River	Potential
107	Rappahannock River	Designated
108	Rappahannock River	Potential
109	Rivanna River	Designated
110	Roanoke River	Qualified
111	Roaring Branch	Potential
112	Robinson River	Potential
113	Rockfish River	Designated
114	Rockfish River North Fork	Potential
115	Rush River	Potential
116	Russell Fork	Designated
117	S. Anna River	Potential
118	S. Anna River	Qualified
119	5. Anna River	Potential
120	S. Fork Holston River	Potential
121	S. Fork Shenandoah River	Potential
122	S. Fork Shenandoah River	Qualified
123	S. Fork Shenandoah River	Potential
124	Sandy River	Potential
125	Shenandoah River	Designated
126	Sinking Creek	Potential

NUM	NAME	STATUS
127	Slate River	Qualified
128	Smith River	Potential
129	Smith River	Qualified
130	Smith River	Potential
131	South Mayo River	Designated
132	South Mayo River	Qualified
133	South River	Potential
134	St. Marys River	Designated
135	Staunton River	Qualified
136	Staunton River	Designated
137	Staunton River	Qualified
138	Thornton River	Qualified
139	Thornton River North	Potential
140	Tye River	Designated
141	Walker Creek	Potential
142	Ware River	Potential
143	Whitetop Laurel Creek	Qualified
144	York River	Qualified

# Virginia's Scenic Rivers

	Designated F	Reach			
			Total	Date	Extensions
River	From	Downriver To	Miles	Approved	Added
Appomattox River	100 feet from Lake Chesdin Dam	Confluence with James River	19.2	1977	1998, 2011
Banister River	Route 29 Bridge	Confluence with Dan River	63.3	2013	2014
Big Cedar Creek	Near Lebanon	Confluence with Clinch River	5.8	1992	
Blackwater River	Proctor's Bridge at Route 621	Confluence with Nottoway River at Virginia-	56	2010	
		North Carolina line			
Catoctin Creek	Waterford	Confluence with Potomac River	16	1977	
Chickahominy River	Route 360	Hanover-Henrico-New Kent county line	10.2	1990	
Clinch River	Confluence with Little River	Route 645 (Nash Ford Bridge)	20	1992	1994
Clinch River	Route 58 in Saint Paul	Confluence with Guest River	9.2	2002	
Cranesnest River	Route 327	Flanagan Resevoir Cranesnest Launch Ramp	10.7	2014	
Dan River	Route 880 at Berry Hill Road	Danville's Abreu-Grogan Park	15	2013	
Dan River - Halifax	N.C. line in Halifax County	Confluence with Aaron's Creek	38.6	2015	
Goose Creek	Confluence of north and south prong of Goose Creek, near Linden	Confluence with Potomac River	48	1976	2007
Guest River	100 feet downstream of Route 72	Confluence with Clinch River	6.5	1990	
Hughes River	Shenandoah National Park line	Confluence with Hazel River	10	2010	
Historic Falls of the James^	West Richmond 1970 city limits	Orleans Street (extended)	8.6	1972	1984
Upper James River	Two miles southeast of Route 43 at Eagle Rock	Route 630 Bridge at Springwood	14	1985	1304
Lower James Historic River^	1.2 miles east of Trees Point	Lawnes Creek (James City-Surry county line)	25	1988	
Jordan River	Route 522 Bridge at Flint Hill	Confluence with Rappahannock River	7	2010	
North Mayo River	Route 695	North Carolina line	7.1	2008	
South Mayo River	Patrick County line	North Carolina line	6.9	2008	
Meherrin River	Confluence with North Meherrin River	Brunswick-Greensville county line	54.8	2006	2013
North Meherrin River	Route 712 Bridge	Junction of South Meherrin River	7.5	1997	
Moormans River	Charlottesville Reservoir	Confluence with Mechums River	14	1988	
North Landing River (Pocaty, West	North Landing Road (Route 165)	North Carolina line	26.7	1988	
Neck & Blackwater)					
Nottoway River	Route 40 Bridge at Stony Creek	Confluence with Blackwater River (Virginia-	72.5	1979	1992, 2011
		North Carolina line)			
Rappahannock River	Headwaters near Chester Gap	Ferry Farm/Maysfield Bridge (Route 3)	86	1985	1990
Rivanna River	South Fork Rivanna River Reservoir	Confluence with James River	46	1975	1988, 2009
Rockfish River	Route 693 in Schuyler	Confluence witih James River	9.75	1990	
Russell Fork River	Splashdam railroad crossing	Kentucky line	9	2010	
Shenandoah River	Warren-Clarke county line	West Virginia-Virginia line	21.6	1979	1992
St. Mary's River	Headwaters in Augusta County	George Washingon and Jefferson National	6	1979	
<u> </u>		Forest boundary			
Staunton River	Route 761 in Long Island	Route 360	51.3	1975	2001, 2003
Tye River	Route 738 (Tye Depot Road)	Confluence with the James River	12.7	2014	
		Total miles designated:	815		

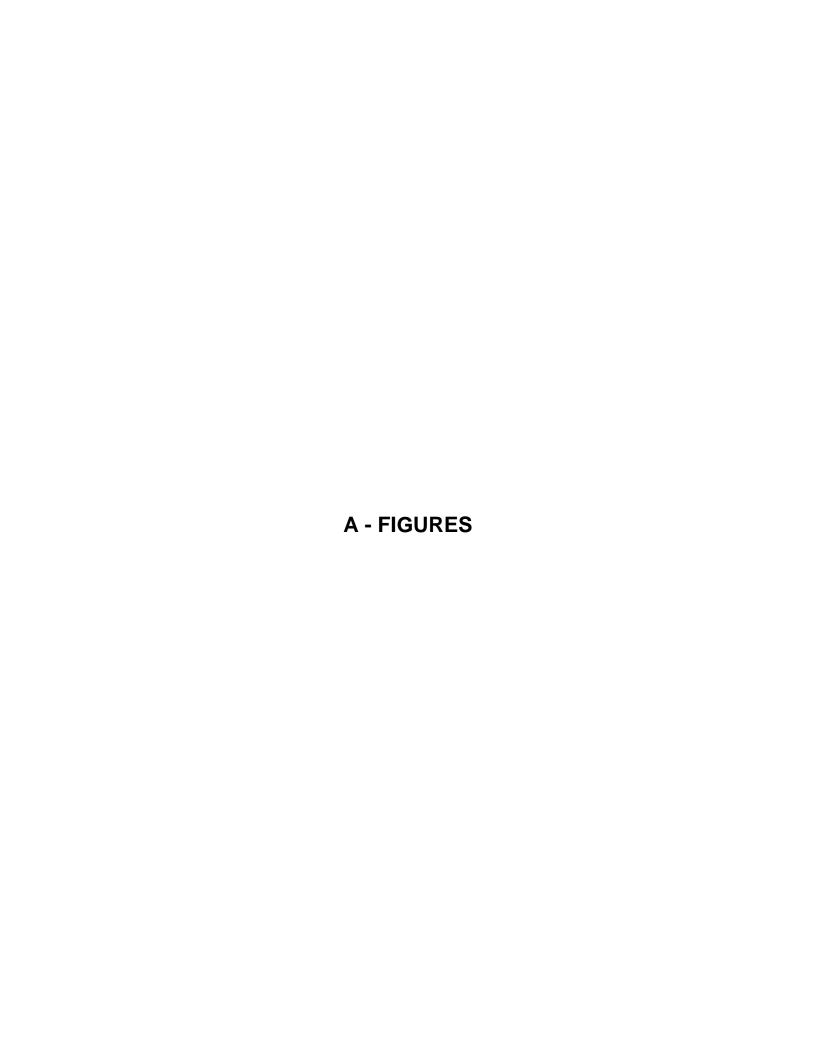
<sup>^</sup> river is protected with a separate act of the Virginia General Assembly and included with the Scenic Rivers Program.

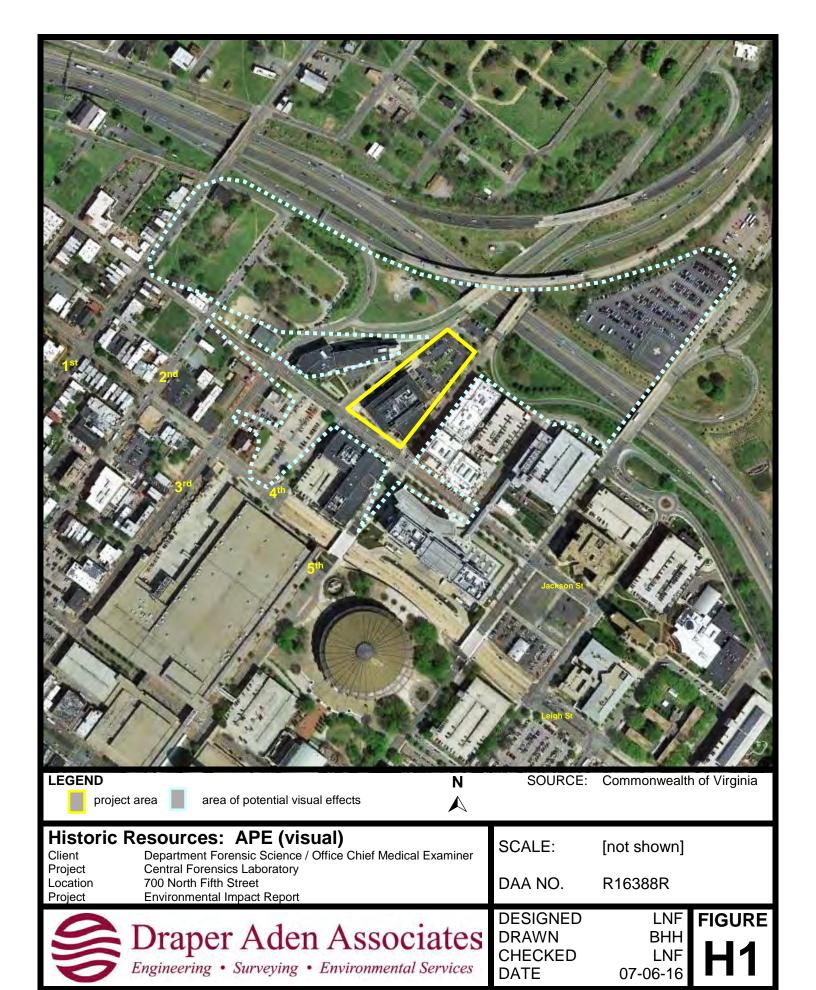
Segments are listed separately if they have a different name, are not connected or are more than five miles.



# **APPENDIX 2C**

DOCUMENTATION: HISTORIC RESOURCES







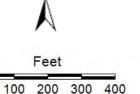


Virginia Cultural Resource Information System

## **Legend**

- Architecture Resources
  Architecture Labels
- Individual Historic District Properties
- Archaeological Resources Archaeology Labels
- USGS GIS Place names
- County Boundaries





1:4.514 / 1"=376 Feet

## Title: DFS - Central Forensics Laboratory

DISCLAIMER: Records of the Virginia Department of Historic Resources (DHR) have been gathered over many years from a variety of sources and the representation depicted is a cumulative view of field observations over time and may not reflect current ground conditions. The map is for general information purposes and is not intended for engineering, legal or other site-specific uses. Map may contain errors and is provided "as-is". More information is available in the DHR Archives located at DHR's Richmond office.

Date: 7/6/2016

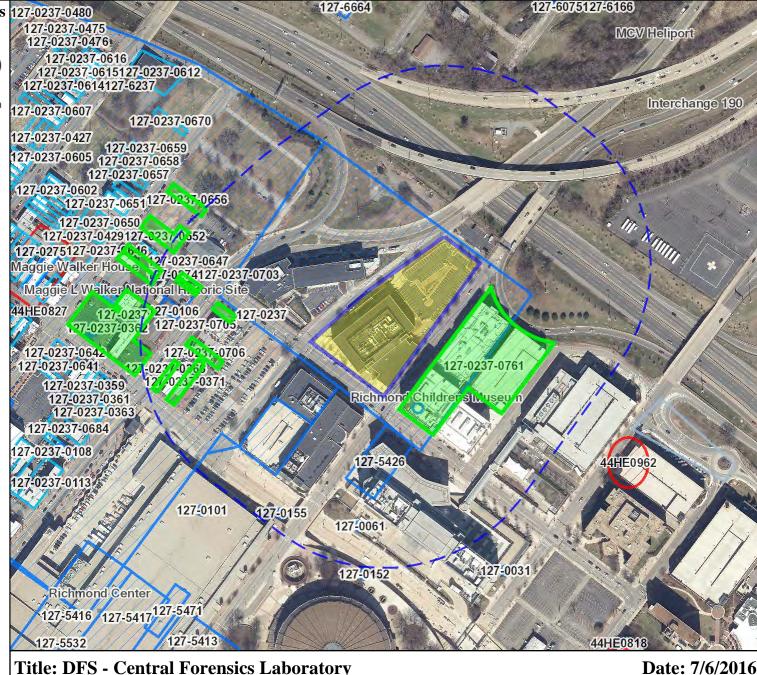
Notice if AE sites:Locations of archaeological sites may be sensitive the National Historic Preservation Act (NHPA), and the Archaeological Resources Protection Act (ARPA) and Code of Virginia §2.2-3705.7 (10). Release of precise locations may threaten archaeological sites and historic resources.



Virginia Cultural Resource Information System

### Legend

- Architecture Resources Architecture Labels
- **Individual Historic District Properties**
- Archaeological Resources Archaeology Labels
- Archaeology Phase 1 Survey
- **DHR** Easements
- **USGS GIS Place names**
- **County Boundaries**



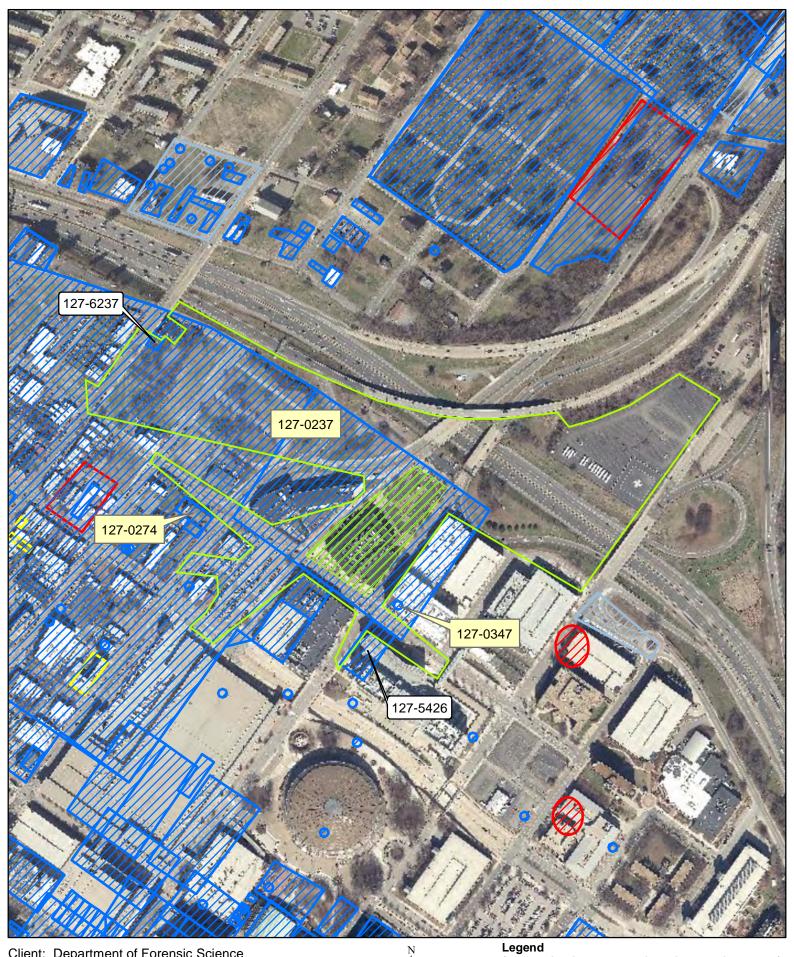


100 200 300 400 1:4.514 / 1"=376 Feet

# Title: DFS - Central Forensics Laboratory

DISCLAIMER: Records of the Virginia Department of Historic Resources (DHR) have been gathered over many years from a variety of sources and the representation depicted is a cumulative view of field observations over time and may not reflect current ground conditions. The map is for general information purposes and is not intended for engineering, legal or other site-specific uses. Map may contain errors and is provided "as-is". More information is available in the DHR Archives located at DHR's Richmond office.

Notice if AE sites: Locations of archaeological sites may be sensitive the National Historic Preservation Act (NHPA), and the Archaeological Resources Protection Act (ARPA) and Code of Virginia §2.2-3705.7 (10). Release of precise locations may threaten archaeological sites and historic resources.



Client: Department of Forensic Science Project: Central Forensics Laboratory EIR Location: 700 North Fifth Street, Richmond, VA

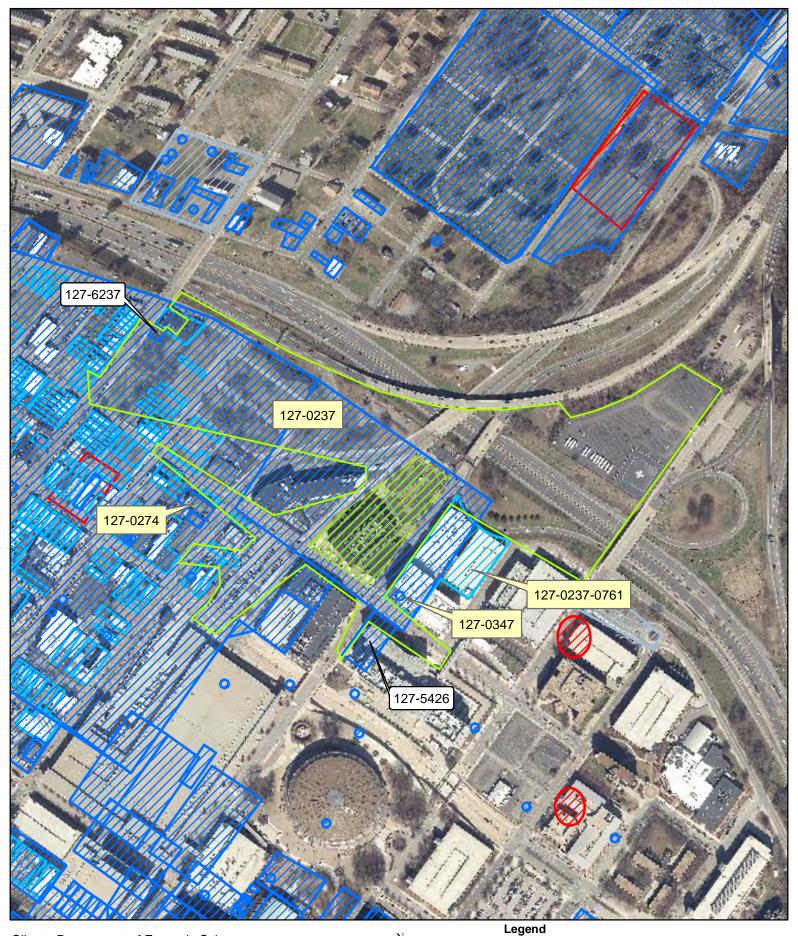
Seach Date: 07/06/2016

By: Draper Aden Associates (BSB)



(Green highlights are project site and visual APE)

- Architecture Resources
- Archaeological Resources
- DHR Easements
- Archaeology Phase 1 Survey



Client: Department of Forensic Science Project: Central Forensics Laboratory EIR Location: 700 North Fifth Street, Richmond, VA

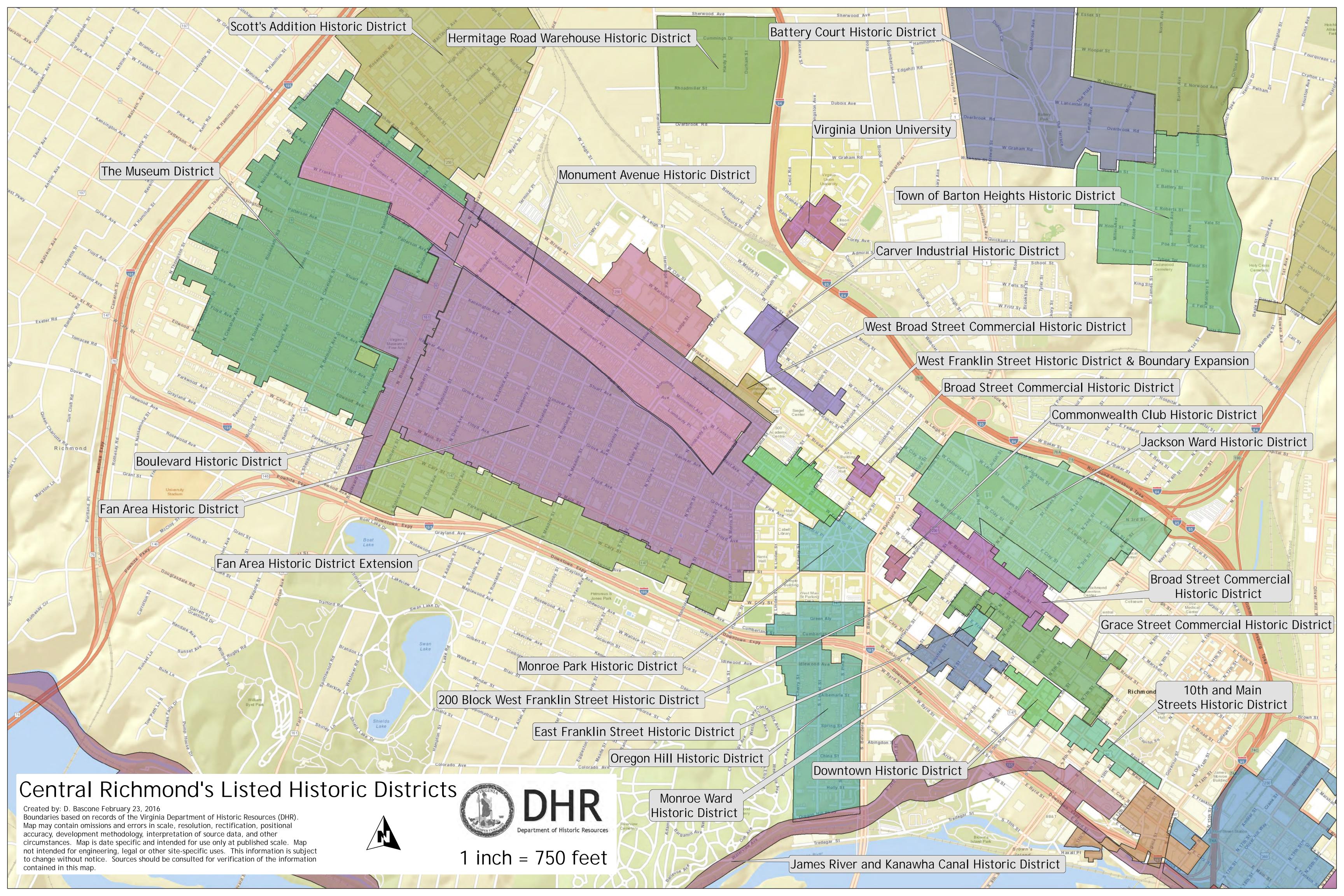
Seach Date: 07/06/2016

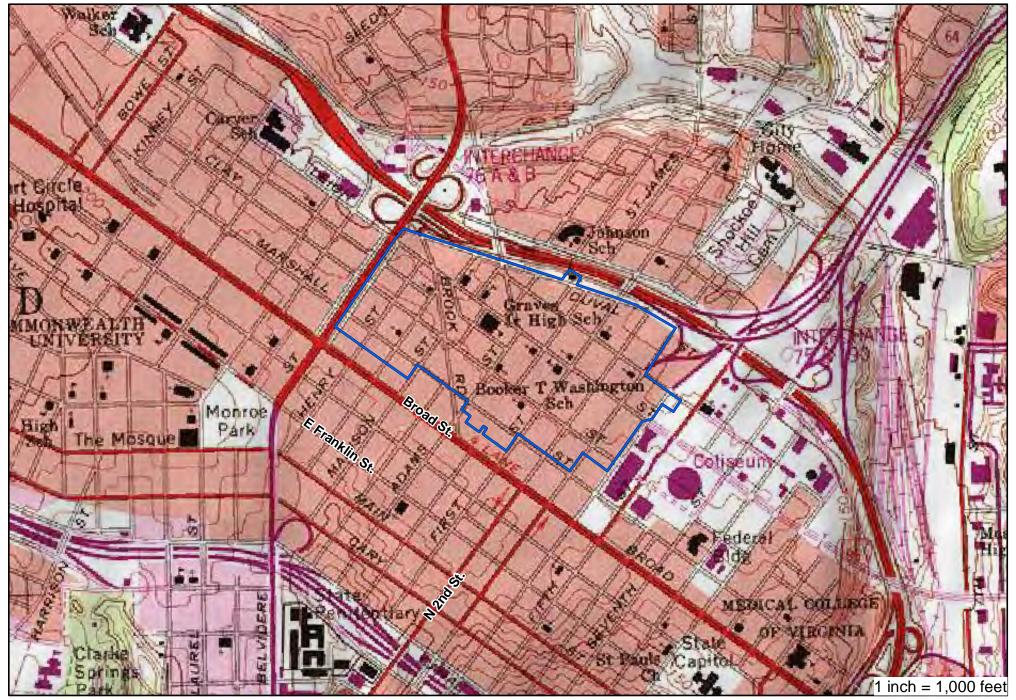
By: Draper Aden Associates (BSB)



# (Green highlights are project site and visual APE)

- Architecture Resources
- Individual Historic District Properties
- Archaeological Resources
- DHR Easements
- Archaeology Phase 1 Survey



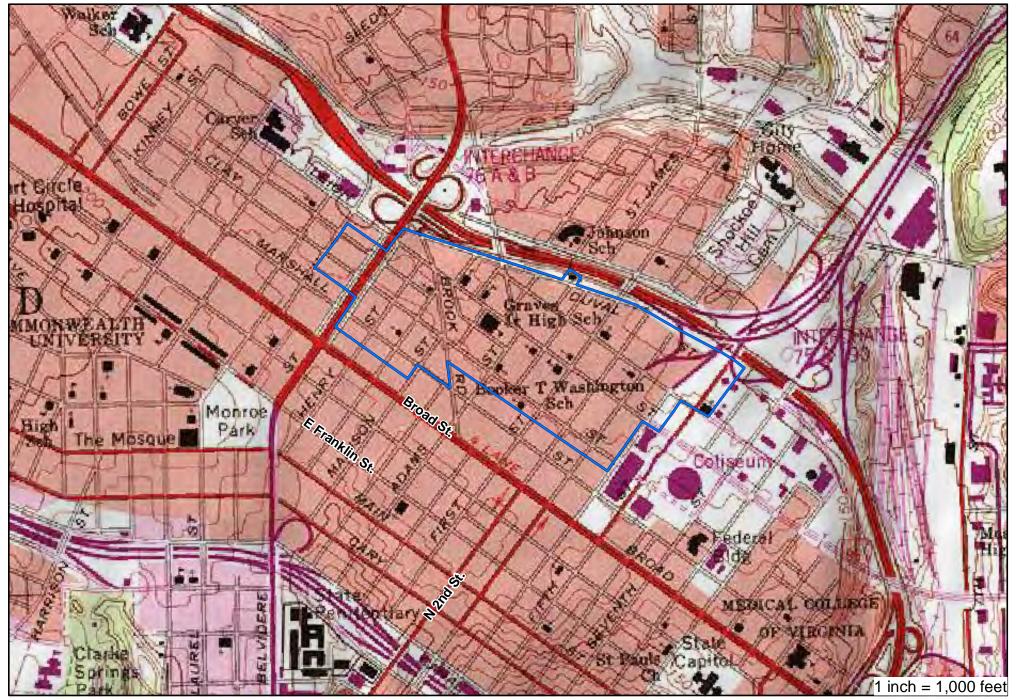


Jackson Ward Historic District and Expansions Most Recent Expansion (May 2008) City of Richmond, Richmond Quad DHR# 127-0237



Sources: VDHR 2009,USGS 2002, Nat. Geographic 2003, VDOT 2007
Records of the Virignia Department of Historic Resources (DHR) have been gathered over many years and the representation depicated is based on the field observation date and may not reflect current ground conditions. The map is for general illustration purposes and is not intended for engineering, legal or other site-specific uses. The map may contain errors and is provided "as-is". Contact DHR for the most recent information as data is updated continually.





Jackson Ward NHL Boundary City of Richmond, Richmond Quad DHR# 127-0237



Sources: VDHR 2009,USGS 2002, Nat. Geographic 2003, VDOT 2007
Records of the Viriginia Department of Historic Resources (DHR) have been gathered over many years and the representation depicated is based on the field observation date and may not reflect current ground conditions. The map is for general illustration purposes and is not intended for engineering, legal or other site-specific uses. The map may contain errors and is provided "as-is". Contact DHR for the most recent information as data is updated continually.



Property	Quad	VLR	NRHP	DHR#
Hancock-Wirt-Caskie House, Additional Documentation	Richmond	10-15-2007	05-30-2008	127-0042
Saint John's Church Historic District Saint John's Church Historic District, Boundary Increase	Richmond Richmond	06-02-1970 04-17-1990	09-15-1970 01-17-1991	127-0192 127-0192
Main Street Station and Trainshed	Richmond	07-07-1970	10-15-1970 <b>NHL 12-08-1</b> 9	127-0172 <b>976</b>
Kent-Valentine House	Richmond	10-06-1970	12-18-1970	127-0112
Tredegar Iron Works (44HE438)	Richmond	01-05-1971	07-02-1971 <b>NHL 12-22-1</b> 9	127-0186 <b>977</b>
James Monroe Tomb	Richmond	03-19-1997	11-11-1971 <b>NHL 11-11-1</b> 9	127-0221-0080
Linden Row	Richmond	07-06-1971	11-23-1971	127-0022
Maymont	Richmond	07-06-1971	12-16-1971	127-0182
Barret House	Richmond	11-16-1971	02-23-1972	127-0029
Broad Street Station (Science Museum of Virginia)	Richmond	11-16-1971	02-23-1972	127-0226
Confederate Memorial Chapel	Richmond	11-16-1971	02-23-1972	127-0224
Crozet House	Richmond	11-16-1971	02-23-1972	127-0047
Second Presbyterian Church	Richmond	11-16-1971	03-29-1972	127-0016
Shockoe Slip Historic District	Richmond	11-16-1971	03-29-1972	127-0219
Shockoe Slip Historic District Shockoe Slip Historic District Extension Shockoe Slip Historic District 2005 Boundary Increase Shockoe Slip Historic District 2012 Boundary Increase	Richmond Richmond Richmond	07-20-1982 06-01-2005 06-21-2012	04-20-1983 08-24-2005 08-14-2012	127-0219 127-0219 127-0219
Bolling Haxall House (Woman's Club)	Richmond	11-16-1971	03-16-1972	127-0033
Leigh Street Baptist Church	Richmond	11-16-1971	03-16-1972	127-0011
Ellen Glasgow House	Richmond	01-18-1972	05-05-1972 <b>NHL 11-11-1</b> 9	127-0056 <b>971</b>
Stewart-Lee House	Richmond	01-18-1972	05-05-1972	127-0064
West Franklin Street Historic District West Franklin Street, Boundary Increase 2009	Richmond Richmond	03-21-1972 06-18-2009	09-14-1972 09-16-2009	127-0228 127-0228
Taylor-Mayo House (Mayo Memorial Church House)	Richmond	05-16-1972	04-02-1973	127-0075
Henry Coalter Cabell House	Richmond	11-16-1971	12-27-1972	127-0225
Twenty-nine Hundred Block of Grove Avenue Historic District	Richmond	10-17-1972	02-20-1973	127-0238
Mason's Hall	Richmond	01-16-1973	07-02-1973	127-0019
Old Stone House	Richmond	10-16-1973	11-14-1973	127-0100
Woodward House	Richmond	05-21-1974	06-19-1974	127-0119
Maggie Lena Walker House	Richmond	04-15-1975	05-12-1975 NHL 05-15-19	127-0275 <b>975</b>
Third Street Bethel African Methodist Episcopal Church	Richmond	02-18-1975	06-05-1975	127-0274
Wilton	Bon Air	10-21-1975	04-30-1976	127-0141
Blues Armory	Richmond	12-16-1975	05-17-1976	127-0278
Jackson Ward Historic District	Richmond	04-20-1976	07-30-1976 NHL 06-02-19	127-0237)
Jackson Ward Historic District, Additional Documentation Approved Jackson Ward Historic District, Boundary Increase Jackson Ward Historic District, Boundary Increase	Richmond Richmond Richmond	11-04-2002) 06-01-2005 03-20-2008	11-04-2002 09-26-2005 05-16-2008	127-0237 127-0237 127-0237
Pace-King House	Richmond	04-20-1976	07-30-1976	127-0229
Virginia Mutual Building	Richmond	02-15-1977	11-07-1977	127-0249
Two Hundred Block West Franklin Street Historic District Two Hundred Block West Franklin Street H. D., Boundary Expansion	Richmond Richmond	05-17-1977 08-17-1994	11-17-1977 10-21-1994	127-0281 127-0281
Agecroft	Bon Air	07-18-1978	12-13-1978	127-0223
Reveille	Richmond	10-17-1978	02-01-1979	127-0310
Joseph P. Winston House	Richmond	02-21-1978	06-11-1979	127-0222
Saint Andrew's Episcopal Church Complex	Richmond	04-17-1979	06-22-1979	127-0314
Fourth Baptist Church	Richmond	05-15-1979	09-07-1979	127-0318
Centenary Church	Richmond	10-16-1979	12-28-1979	127-0321
Block 0-100 East Franklin Street Historic District	Richmond	10-16-1979	02-27-1980	127-0317
			1700	

UNITED STATES DEPARTMENT OF THE INTERIOR NHL: 10-7-78

FOR NPS USE ONLY NATIONAL PARK SERVICE

TIONAL REGISTER OF HISTORIC PLACES

RECEIVED

JUL 30 1976

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AND/OR COMMON Jac	kson Ward Historic Di	strict (Preferre	d)	•	· · · · · · · · · · · · · · · · · · ·
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·	·			FOR PUBLICATION	·
CITY, TOWN			-	GRESSIONAL DISTRI	ct terfield, III)
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Virgi		51		City)	760
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BUILDING(S)	PRIVATE	UNOCCUPIED		COMMERCIAL	PARK
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SITE	PUBLIC ACQUISITION	ACCESSIBLE	,	ENTERTAINMENT	XRELIGIOUS
_OBJECT	IN PROCESS	XYES: RESTRICTED		GOVERNMENT	SCIENTIFIC
	BEING CONSIDERED	_YES: UNRESTRICTED		INDUSTRIAL	TRANSPORTATION
		NO .		MILITARY	OTHER:
OWNER OF	PROPERTY				
NAME		•			
	Multiple Ownership				
STREET & NUMBER	•	•			
CITY, TOWN			<del></del>	STATE	
		VICINITY OF		•	
LOCATION	OF LEGAL DESCR	IPTION			
COURTHOUSE. REGISTRY OF DEEDS, E	TC Richmond City Ha	, 3 1		•	
STREET & NUMBER	Richmond City na	<u>* +                                   </u>			<del></del>
·	900 East Broad S	treet		<u>.                                    </u>	
CITY, TOWN				STATE	
	Richmond			Virginia	
REPRESEN	TATION IN EXIST	ING SURVEYS	3 (3) (S	ee Continuat	ion Sheet #1)
TITLE		•			
	oric American Buildin	gs Survey			,
DATE					
193	6	X-FEDERAL	STATE _	_COUNTYLOCAL	
DEPOSITORY FOR SURVEY RECORDS	Library of Congress	•			
CITY, TOWN				STATE	
	Washington			D. C.	



### CONDITION

\_\_DETERIORATED

X GOOD \_FAIR

\_\_EXCELLENT

\_\_UNEXPOSED

**CHECK ONE** 

XUNALTERED
\_ALTERED

**CHECK ONE** 

Xoriginal site

\_\_MOVED DATE\_\_\_\_

### DESCRIBE THE PRESENT AND ORIGINAL (IF KNOWN) PHYSICAL APPEARANCE

Jackson Ward is a visually cohesive residential neighborhood of nineteenth-century townhouses located in the center of Richmond. Covering some forty-two city blocks, the neighborhood has well-defined boundaries. On its northern edge is the Richmond-Petersburg Turnpike; its eastern limits are set by a redevelopment area centered around the Richmond Coliseum; the southern edge is defined by the wholly commercial area paralleling Broad Street; and to the west, the neighborhood dissolves into twentieth-century housing of little architectural or historical interest. The streets are laid on a grid plan with the exception of Brook Road which cuts through the district on a diagonal following an old turnpike trace antedating the other streets. The principal streets run east-west and are (from north to south) Duval, Jackson, Leigh, Clay, and Marshall. The north-south cross streets are (from east to west) 5th through 1st Streets, St. James, Adams, Madison, Monroe, Henry, and Gilmer Streets. edge of the neighborhood is interrupted by a major four-lane artery, Belvidere Street (U.S. Route 1-301), which, however, has always been a principal thoroughfare. Belvidere Street has been heavily planted with trees and shrubbery in recent years, lessening its impact as a visual intrusion. Trees are thinly scattered on the rest of Jackson Ward's streets with the exception of Clay Street which for most of its course is shaded by a canopy of elms, making it one of the more handsome historic thoroughfares in the city. Clay Street, like nearly all other streets in the area, is lined with brick sidewalks laid in herringbone pattern and bordered by granite curbs.

The architecture of Jackson Ward includes practically the entire range of medium-size townhouse types erected in Richmond from the early nineteenth century to the early twentieth century. Most of the dwellings are row houses with party walls, although free-standing structures are not uncommon. Nearly all are built on small, narrow lots and have front yards ten feet deep or less. Many of the yards are enclosed by ornamental iron fences. A number of houses originally had free-standing kitchens and other outbuildings in the rear, but these have either disappeared or have been incorporated into later wings. The majority of the houses are built of brick; only a few are frame. Ninety percent of the nearly six hundred houses in Jackson Ward were erected in the nineteenth century, and some one hundred of them date prior to the War between the States. One of the earliest is a 1793 gambrel-roof frame cottage, one of only two remaining examples of a once prevalent Richmond type. At least four additional houses date prior to 1820. An especially handsome Federal house is the free standing Addolph Dill House erected in 1832 at 00 Clay Street, one of few houses erected in the city during that decade. The Greek Revival style is well represented by numerous three-bay townhouses with small Doric porches. The large quantity of Italianate style post-Civil War dwellings are noted for their very handsome ironwork porches. Clay Street contains one of the finest collections of ornamental cast iron in the country. The houses of the 1880s and '90s are characterized by their elaborate Eastlake style wooden porches.

The majority of Jackson Ward's dwellings, early and late, were built as middle-class housing; many now are occupied by poorer families and have been subdivided for multifamily occupancy. There is, however, an unusually high percentage (for an inner city neighborhood) of resident ownership which contributes to many of the houses being maintained in better condition than otherwise would be expected for such an area. The more dilapidated houses are situated on the northern edge of the district, near the Turnpike. The houses in the best condition line Clay and Leigh Streets. Despite many pressures, the neighborhood remains remarkably stable. The north side of St. James Street's 600 block is all resident owned with no changes in title having taken place since 1956.

(See continuation sheet # 2)

PERIOD	AF			
PREHISTORIC	ARCHEOLOGY-PREHISTORIC	COMMUNITY PLANNING	_LANDSCAPE ARCHITECTURE	X_RELIGION
1400-1499 1500-1599	ARCHEOLOGY-HISTORICAGRICULTURE	CONSERVATION 'ECONOMICS	LAW LITERATURE	SCIENCESCULPTURE
_1600-1699	XARCHITECTURE	X EDUCATIONENGINEERING	MILITARY MUSIC	X_SOCIAL/HUMANITARIAN
<u>_1700-1799</u> <u>X_</u> 1800-1899	X COMMERCE	EXPLORATION/SETTLEMENT	PHILOSOPHY	TRANSPORTATION
<u>X</u> 1900-	COMMUNICATIONS _	INDUSTRYINVENTION	X_POLITICS/GOVERNMENT	OTHER (SPECIFY)

### SPECIFIC DATES

### **BUILDER/ARCHITECT**

### STATEMENT OF SIGNIFICANCE

Jackson Ward is a fine nineteenth-century residential neighborhood and internally one of the least altered in Richmond. The area is broadly significant to students of black, urban, and business history and is unique for having been the center of Negro community life in Richmond during a watershed era for that race and the nation.

During the decades around the turn of the century, when Richmond had powerful credentials for being considered the foremost black business community in the nation, Jackson Ward was the hub of black professional and entrepreneurial activities in the city and the state. The fraternal organizations, cooperative banks, insurance companies, and other commercial and social institutions that figure most prominently in that saga first bore fruit here. The individuals of exceptional vision and talent who nurtured them—the Maggie Walkers, John Mitchells, W. W. Brownes, and Giles B. Jacksons—lived and worked in Jackson Ward.

While Jackson Ward existed as a political subdivision only between the years 1871 and 1905, the name "Jackson" was associated with the area from the 1820s and persists in popular usage to the present. Residents of the area could gather at James Jackson's (beer) Garden, located at Second and Leigh Streets, during the 1820s, and the area north of Broad (then "H") Street was known as "Jackson's Addition" at least as early as 1835 when it was so designated on the Bates Map of Richmond. Giles B. Jackson, the first Negro admitted to the practise of law before the Supreme Court of Virginia and a leading entrepreneur and attorney at the turn of the century, provides yet another instance of the association of the name with the neighborhood.

When in 1871 that part of Richmond bounded on the north and west by the then city corporation limits, on the south by Clay Street, and on the east by Eighteenth Street was established as a separate political subdivision, it was styled Jackson Ward. This was appropriate both for the earlier associations of the name with the area and for the fact that several other wards bore the names of Presidents. For the remainder of the century, Richmond had wards named after Jefferson, Monroe, Madison, and Jackson, in addition to Marshall and Clay.

The historic district is visually dominated by Greek Revival and Italianate townhouses constructed during the late ante-bellum period and post-bellum houses, many of the latter having elaborate ironwork or carved wooden trim. Indeed, the area contains the largest concentration of decorative cast-iron to be found in the state. These structures are complemented by shady streets and several late nineteenth-century churches. There are also a lesser number of structures dating from the early nineteenth century and others from the twentieth. The early vernacular houses on the north edge of the district are of particular interest. Other more substantial early dwellings are scattered along Marshall and Clay Streets and on adjacent cross streets, with several others at the eastern end of Leigh Street. Addolph Dill, a highly successful baker, built a number of houses (See continuation sheet # 21)

MAJOR BIBLIOGRAPHICAL REFERENCES   Surrell, W. P. and D. E. Johnson, Sr.   Deserve-Five Years:   History of the Grand Fountain of the United Order of the True Reformers.   1881-1903.   Richmond, Va., 1099.	MAIOR RIBLIOGRAPI	HICAL BEFFR	ENCES		
of the United Order of the True Reformers, 1881-1905. Richmond, Va., 1909. Charter and Ordnances of the City of Richmond, James E. Goode, City Printer, Richmond, Va., 1875. Directories, City of Richmond, 1819, 1845-46, 1852, 1860, 1868, 1870-1905. Dilaney, Paul S. The Architecture of Historic Richmond. Charlottesville, Va., 1968.  (See Continuation Sheet # 28).  CGEOGRAPHICAL DATA  ACREAGE OF NOMINATED PROPERTY 130 acres  UTA REFURBACES  A 1.8    218,511,310    4,15,817,010    200	EMPLOY TO THE PROPERTY OF THE				of the Creat Fountain
Charter and Orchanness of the City of Richmond, James E. Coode, City Printer, Richmond, Va., 1875.  Directories, City of Richmond, 1819, 1845-46, 1852, 1860, 1868, 1870-1905.  Dilaney, Paul S. The Architecture of Historic Richmond. Charlotteswille, Va., 1968.  (See Continuation Sheet #28).  GEOGRAPHICAL DATA  ACREAGOR POMMARED PROPERTY  130 acres  UVR REFERENCES  A 1,8   2[8,5 1,3,0]   4,1[5,8]7,0,0]   8   1,8   2[8,5 1,0,0]   4,1[5,7]8,9,0]   ZONE EASTING NORTHING CHARLOTTE   4,1[5,7]2,2,0]   0   11,8   2[8,3]7,6,0]   2,11[5,8]7,5,0]   VERBAL BOUNDARY DESCRIPTION  (See continuation sheet #29)  (See continuation sheet #29)  USTAIL STATES AND COUNTIES FOR PROPERTIES OVERLAPPING STATE OR COUNTY BOUNDARIES  STATE CODE COUNTY CODE  TORROW PREPARED BY  NAME THE  Virginia Historic Landmarks Commission Staff  ORGANIZATION  VIRGINIA HISTORIC Landmarks Commission Staff  ORGANIZATION  STREET & NUMBER  221 GOVERTOR STREET  804-786-3144  CITYOR TOWN  Richmond Virginia Property Within the Stafe Stafe  Richmond Virginia Property Within the Stafe Stafe HISTORIC PRESERVATION OFFICER CERTIFICATION  THE EVALUATED SIGNIFICANCE OF THIS PROPERTY WITHIN THE STATE IS:  NATIONAL X STATE X LOCAL  As the designated State Historic Preservation Officer for the National Historic Preservation Act of 1966 (Public Low 89 605.)    Director North The Property of inclusion in the National Register and certify that it has been evaluated according to the criteria and procedures at tops by the National Park Service.  STATE HISTORIC PRESERVATION OFFICE OF THE PROPERTY WITHIN THE STATE IS:  NATIONAL X LOCAL  ATTERY THAT THIS PROPERTY IS INCLUDED IN THE NATIONAL HEGISTEP  DIRECTOR. OFFICE OF ARCHEOLOGY AND MISTORIC PRESERVATION  DATE  DI					
Var., 1875, Directories, City of Richmond, 1819, 1845-46, 1852, 1860, 1868, 1870-1905. Dilancy, Paul S. The Architecture of Historic Richmond. Charlottesville, Va., 1968. (See Continuation Sheet #28).					
Dilaney, Paul S. The Architecture of Historic Richmond. Charlottesville, Va., 1968.  Dilaney, Paul S. The Architecture of Historic Richmond. Charlottesville, Va., 1968.  (See Continuation Sheet £28).  MACRAGEGOR APHICAL DATA  ACRAGEGOR NOMINATED PROPERTY  130 acres  UTH REFERENCES  A 1.8   218,511,3,0   4.115,817,0;0   ZONE EASTING NORTHING Chiral [218,137,5;0]   A.115,718,70,0   NORTHING Chiral [218,137,5;0]   A.115,718,70,0   DILB   218,137,6;0   DILB   218,137,6;0		e city of kichiic	nia, James	L. Goode, City	Trineer, Richmone,
Dilaney, Paul S. The Architecture of Historic Richmond. Charlottesville, Va., 1968.  (See Continuation Sheet # 25).    Continuation Sheet # 25).   Continuation Sheet # 25).   Continuation Sheet # 25).   Continuation Sheet # 25).   Continuation Sheet # 25).   Continuation Sheet # 26].   Continuation Sheet # 26].   Continuation Sheet # 26].   Continuation Sheet # 27].   Continuation Sheet # 29].   Continuation Sheet # 29		nd. 1819 1845-4	6 1852 1	860 1868 187	0-1905.
(See Continuation Sheet #28).    Continuation Sheet #28)   Continuation Sheet #28)   Continuation Sheet #28)					
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Form No. 10-300a (Rev. 10-74)

> UNITED STATES DEPARTMENT OF THE INTERIOR NATIONAL PARK SERVICE

# FOR NPS USE ONLY RECEIVED JUL 30 1976 DATE ENTERED

# NATIONAL REGISTER OF HISTORIC PLACES INVENTORY -- NOMINATION FORM

CONTINUATION SHEET #I

ITEM NUMBER

PAGE

1

REPRESENTATION IN EXISTING SURVEYS

- (2) Historic American Buildings Survey Inventory Federal Library of Congress Washington, D. C.
- (3) Virginia Historic Landmarks Commission Survey 1967, 1975 State Virginia Historic Landmarks Commission 221 Governor Street Richmond, Virginia-

### UNITED STATES DEPARTMENT OF THE INTERIOR NATIONAL PARK SERVICE

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DATE ENTERED	JUL 3 0 1976			

# NATIONAL REGISTER OF HISTORIC PLACES **INVENTORY -- NOMINATION FORM**

CONTINUATION SHEET #2

ITEM NUMBER 7

PAGE

DATE ENTERED

### DESCRIPTION

A contributing factor to the visual cohesiveness of Jackson Ward is the maintenance of consistent scale. Few of the houses are over three stories in height; most are two stories. Many of the blocks are accented architecturally by nineteenth-century churches and other institutional buildings. The major visual intrusions are several bland low-rent apartments and warehouses along Duval Street and a modern firehouse located at the intersection of Leigh Street and Brook Road. A few service stations and small commercial structures are scattered about, but none is over two stories in height. Several block facades have voids caused by buildings lost to fire and parking lots, but the general impression is one of architectural consistency. A few larger commercial buildings are located in the eastern end of the district, but they are unobtrusive. The only fully commercial street, Second Street, has been so for many years, along with part of Third Street. The south side of the 200 and 300 blocks of West Leigh Street was demolished several years ago to create a park, however in the process, a pleasant vista of the Ebenezer Baptist Church and the Battalion Armory was opened up.

Until the past year, little effort had been spent on the preservation or restoration of Jackson Ward structures. Since then, however, the Maggie L. Walker Historical Association has sought to gain, among other things, recognition for the neighborhood. The City of Richmond is currently undertaking an analysis of the district with the goal of maintaining it as a residential area. The Community Development division of the Office of City Planning, while recognizing the impetus of downtown commercial development, has been instrumental in setting up public meetings for Jackson Ward residents for the purpose of discussing plans for the future of the area. It is hoped that the area may someday receive historic district zoning, but as yet, the area's historic structures have no specific protection.

> CCL MTP

### Jackson Ward Architectural Inventory

The following is a partial inventory of the more than six hundred structures in Jackson Ward. This inventory lists examples of buildings having major architectural and/or historical significance as well as examples typical of those in an entire block. All of the various architectural types and styles found in the area are included in this list. Furthermore, at least one representative of virtually every block in the district has been inventoried.

(See continuation sheet # 3)

# UNITED STATES DEPARTMENT OF THE INTERIOR NATIONAL PARK SERVICE

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# ATIONAL REGISTER OF HISTORIC PLACES INVENTORY -- NOMINATION FORM

DATE ENTERED JUL 30 1976

	CONTINUATION SHEET 2a	ITEM NUMBER 7 PA	AGE la	
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# JATIONAL REGISTER OF HISTORIC PLACES INVENTORY -- NOMINATION FORM

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\* inventory list is not complete

CONTINUATION SHEET #3

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PAGE 2

7. DESCRIPTION

2'C'

127-237-00.1

Bul" Dojangles" reprises

West Marshall Street.

127-237-200 Block

200-208 (north side), Steamer Company No. 5 (ALSO 127-370)
Firehouse: stuccoed brick, two stories, two three-sided bays flanking entrance. Pilastered bays, ornamental hoods above windows, bracketed cornice, iron balcony above entrance, bell tower removed. Italianate; built 1863. Built on a triangular lot. The site of a fire station since 1850, Steamer Company No. 5 is the oldest remaining firehouse in Richmond.

300 Block

All of the houses on the north side of the block save three are antebellum, Greek Revival structures built between 1848-1855.

300-304 (north side)

Two-Unit Townhouse Row: brick, two stories, three bays each unit. Greek Revival; 1848. Built for F. T. Isbell.

306-308 (north side)

Two-Unit Townhouse Row: pressed brick, two stories with raised basement, three bays each unit. Side hall plan, 6/6 sash, stone lintels, rectangular porch, square porch columns. Greek Revival; mid-nineteenth century.

312 (north side)

Townhouse: pressed brick,  $1\frac{1}{2}$  stories with raised basement, three bays. Mansard roof, dormer windows, cast-iron porch. Late nineteenth century. Possible alteration of earlier house.

313 (south side), Barham House

Townhouse: stuccoed brick,  $2\frac{1}{2}$  stories, three hays. Creek Revival door with side lights and transom, later Greek Revival porch with fluted Greek Doric columns, late nineteenth-century bracketed cornice, 2/2 sash. Built 1817 by William Young. One of earliest houses remaining in Ward.

316 (north side)

Townhouse: pressed brick,  $2\frac{1}{2}$  stories with raised basement, three bays. Mansard roof and dormer windows added late nineteenth century, sash altered, first-floor windows shortened, porch columns altered, basement walls stuccoed. Greek Revival; mid-nineteenth century.

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#### West Marshall Street (Cont'd.)

#### 400 Block

Included on this block is a collection of houses of both brick and wood construction exhibiting representative styles from the mid- to late nineteenth century.

401 (south side)

Townhouse: frame, two stories with raised basement, three bays. Modillion cornice (also used on porch--box columns with recessed panels, rectangular balusters), two-story service porch on rear wing, 6/6 sash, gable roof. Greek Revival; mid-nineteenth century.

410 (north side)

Townhouse: frame, two stories with raised basement, three bays. Coupled porch columns, iron lacework railing, first-floor windows altered, mansard roof added. Greek Revival; mid-nineteenth century.

#### 500 Block

This block is composed of brick townhouses in both Greek Revival and Italianate styles, dating from the mid- to late nineteenth century.

503 (south side)

Townhouse: pressed brick, two stories with raised basement, three bays. Rectangular Greek Revival porch with square columns, 6/6 sash, stone lintels and sills, gable roof. Greek Revival; mid-nineteenth century.

#### East Clay Street

300 Block

321 (south side)

Townhouse: pressed brick, two stories, three bays. Georgian Revival; early twentieth century.

319 (south side)

Townhouse: stuccoed brick,  $2\frac{1}{2}$  stories, three bays. Mansard roof, segmental-arch windows, 4/4 sash, iron cresting, cast-iron porch with grape-leaf-cluster design, one-bay service wing to west probably original. Second Empire; 1370-1880.

317 (south side)

Two-Unit Townhouse: identical to 409-417 West Clay Street, Georgian Revival porch. Late Victorian Italianate; late mineteenth century.

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#### East Clay Street (Cont'd).

315 (south side)

Two-Unit Townhouse: identical to 409-417 West Clay Street. Late Victorian Italianate; Late nineteenth century.

#### 200 Block

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East end of north side of block demolished.

214-212 (north side), Southern Aid Life Insurance Company Building. Commercial Building: brick, four stories. Stone pilasters with stylized Corinthian capitals, stone entablature with pediments above entrances, symmetrical facade, modillion cornice. Georgian Revival; 1931. The largest commercial structure in Jackson Ward and home of the Southern Aid Life Insurance Company, Inc.

#### 211 (south side)

Townhouse: pressed brick, two stories, three bays. Pilastered front bays, segmental-arch windows--stone spring blocks and keystones, iron porch with coupled columns, metal box cornice. Italianate; late nineteenth century.

209-201 (south side) Five-Unit Townhouse Row:

Pressed brick, two stories, two bays each unit. No. 205 has two-story rectangular bay terminating in brick pediment; Nos. 203 and 207 flanking have three-sided bays; Nos. 201 and 209 terminate row with round towers; Nos. 207 and 209 retain original door hoods supported on scrolled brackets; No. 205 retains original Eastlake porch; Nos. 203 and 201--brick covered with imitation stone. Queen Anne; late nineteenth century.

#### 204 (north side)

Townhouse: pressed brick, two stories with raised basement, three bays. Roman Doric porch--fluted columns, box cornice, hipped roof, 6/6 sash. Greek Revival; mid-nineteenth century.

#### 202-200 (north side)

Two-Unit Townhouse Row: stuccoed brick, two stories, three bays each unit. Bracketed cornice, cast-iron porch with grape-leaf-cluster design. Italianate; mid-nineteenth century.

#### 100 Block

113-111 (south side)

Two-Unit Townhouse Row: brick, two stories with raised basement, three bays each unit. Stepped gables, center chimney, Georgian Revival porches. Greek Revival; mid-nineteenth century.

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#### East Clay Street (Cont'd).

00 Block

21 (south side)

Store: pressed brick, two stories, three bays. Originally a townhouse residence. Italianate; late nineteenth century. Retains excellent set of double exterior Queen Anne style doors with incised geometric patterns in recessed panels.

9 (south side), Mosby Memorial Baptist Church
Stuccoed brick, one-story on raised basement, three bays. Tetrastyle pedimented portico with square columns; center bay of portico is entrance foyer with entrances on both sides, steps altered. Greek Revival; circa 1865. Originally Society of Friends Meeting House, sold 1911 to Clay Street Baptist Church, now Mosby Memorial Baptist Church.

Along that portion of Clay Street extending west from the 00 block, beyond Belvidere, and through to the 700 block, there remains, almost completely intact, a mid-to late nineteenth-century residential street. The residences are two to three stories, primarily brick, many with cast-iron or sawn-work porches typical of the period. Iron and wood late nineteenth-century fences outline small front yards. The wide, boulevard-type street lined with elms creates a setting and foreground for these residential blocks.

00 (south side), Dill House

Freestanding house: pressed brick, two stories with raised basement, three bays. Brick is laid in Flemish bond with narrow mortar joints; Roman Ionic porch with coupled, unfluted columns and balustrade; 6/6 sash; square corner blocks; hipped roof. Greek Revival; built 1832 for Addolph Dill. Dill was a prosperous Richmond merchant; he constructed one of the few large houses in the city between the years 1819 and 1834.

#### West Clay Street

00 Block

8-14 (north side)

Four Detached Townhouses: pressed brick, two stories with raised basement, three bays each unit. Each house nearly identical; Nos. 10-14 have typical Greek Revival porches, both square box columns and fluted columns are employed. Stepped gables; No. 8 ground floor and first floor altered for restaurant. Greek Revival; No. 14 built 1843; Nos. 8-12 built 1847.

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#### West Clay Street (Cont'd.)

15 & 21 (south side), Dill Houses
Townhouses: pressed brick, 2½ stories with raised basement, three bays. Identical brick houses constructed by Dill; porches with Roman Doric columns; No. 15 has sheaf-of-wheat railings, original sash replaced in No. 15; stepped gables; dormer windows; original lawn between houses has been filled in with late nineteenth-century dwellings. Greek Revival; 1847; builder Addolph Dill. No. 15 was built for Dill's mother; Rev. F. M. Whittle, Bishop of Episcopal Diocese of Virginia in mid-nineteenth century, lived at No. 21.

16 (north side), Hood Temple A.M.E. Zion Church
Brick, two stories. Original building had full raised basement with sanctuary
above. Side wall unaltered--five bays, brick pilasters, round-headed sanctuary
windows, corbelled brick cornice, late Gothic Revival facade and bell tower
added (steeple removed). Originally Italianate; 1859; architect, Albert West.
Originally the Clay Street Methodist Church.

100 Block (The north side of this block contains 100-block numbered lots; the south side contains both 100-block and 200-block numbered lots.)
With one exception, No. 105 recently destroyed by fire, the south side of the 100 block is a typical mid- to late nineteenth-century residential block.

107-111 (south side)

Three-Unit Townhouse Row: pressed brick, three stories, three bays each unit. Stone segmental arches over windows of Nos. 109 and 111, cast-iron front porches, central projecting pavilion. Italianate; late nineteenth century.

123 (south side)

Townhouse: pressed brick, three stories with raised basement, three bays. Typical of many ante-bellum Richmond townhouses remodeled and enlarged in the 1880s; bracketed cornice; cast-iron porch and window hoods, cornice, and third story were added during remodeling. Greek Revival-altered; mid-nineteenth century.

136-138 (north side), Taylor House Two-Unit Townhouse Row: brick, two stories, two bays each unit. Built as single residence, enlarged 1820-1847, Flemish bond, double hung windows with sidelights-first floor, double round-headed windows--second floor, bracketed cornice. Federal with later alterations; 1820 & 1820-1847; builder Isaac Goddin. Residence from 1836-1856 of James M. Taylor, leader of Richmond Methodism. Form No. 10-300a (Sev. 10-74)

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West Clay Street (Cont'd.)

207-211 (south side)

Three-Unit Townhouse Row: brick, two stories with raised basements, No. 207--two bays, Nos. 209 and 211--three bays. 6/6 sash, bracketed cornice; all three houses have been altered. Greek Revival; 1837-1839; built by James M. Taylor.

213 (south side)

Townhouse: brick, two stories with raised basement, three bays. Entrance altered. Greek Revival; 1839-1840.

300 Block

305-311 (south side)

Three detached Townhouses: brick, two stories with raised basement, three bays each unit. Detached houses were probably identical when constructed although now are altered. Greek Revival; 1845.

313 (south side)

Townhouse: pressed brick 2½ stories, three bays. Segmental stone arches above windows, dormer windows. Second Empire; late nineteenth century.

400 Block

An excellent mid-to late nineteenth-century residential block with typical Richmond ironwork porches in grape-leaf-cluster and rope patterns. Houses are primarily two stories, late nineteenth century; many wood and iron fences remain.

405 (south side)

Townhouse: pressed brick, two stories, three bays. Typical late nineteenth-century Richmond townhouse, cast-iron porch with grape-leaf-cluster design, stone segmental arches above windows, bracketed cornice, iron cresting, iron fence with wreath design. Italianate; late nineteenth century.

409-417 (south side)

Five-Unit Townhouse Row: pressed brick, two stories, two bays each unit. Each house facade formed by three-sided bay tower and entrance bay, ornamental segmental-arch stone lintels with keystones above windows, wood canopies above entrances supported by large scrolled brackets, bracketed cornices; No. 417 altered by addition of two-story Georgian Revival porch. Late Victorian Italianate; late nineteenth century.

500 Block

The south side of this mid-to late nineteenth-century residential block contains seven slightly altered Greek Revival townhouses.

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#### West Clay Street (Cont'd.)

503 (south side)

Townhouse: pressed brick, two stories with raised basement, three bays. Greek Revival porch with sheaf-of-wheat railing, original 6/6 sash, box cornice. Greek Revival; 1857; built for Robert Priddy.

505-507 (south side)

Two-Unit Townhouse Row: pressed brick, two stories, three bays each unit. Simple porches with narrow box columns, later bracketed cornice. Greek Revival; 1857; built for John Beridge.

509 (south side), Brick Layers Union Headquarters
Townhouse: pressed brick, two stories with raised basement, three bays. Typical porch with square box columns, first-floor window changed to door, box cornice. Greek Revival; 1858.

515 (south side)

Townhouse: pressed brick, two stories, three bays. Box cornice with dentil blocks, Georgian Revival porch added. Greek Revival; mid-nineteenth century.

517 (south side)

Townhouse: pressed brick, two stories with raised basement, three bays. Stepped gable, typical porch with box columns. Greek Revival; mid-nineteenth century; built for John J. Davis.

#### 700 Block

706-708 (north side)

Two-Unit Townhouse Row: pressed brick, two stories with raised basement, two bays each unit. Wide street elevation, No. 706--entrance altered, No 708--porch added. Graek Revival; mid-nineteenth century.

710 (north side)

Townhouse: pressed brick, two stories, three bays. Representative of smaller houses in the Greek Revival style, 6/6 sash, porch altered. Greek Revival; 1845; built for Rosetta Hall.

715-717 (south side)

Two-Unit Townhouse Row: pressed brick, two stories, three bays. Typical of late nineteenth-century townhouses in the city, entrance bay projects slightly to simulate tower; turned-work porch columns and balusters; fan-shaped column brackets; spindle and sawn-work frieze; late nineteenth century.

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#### Catherine Street

500 Block

517 (south side) Everett House

Townhouse: frame, two stories, three bays. Two-story porch, brick end chimney flush with wall. 1854; built by Peter Everett.

523 (south side)

Townhouse: stucco, two stories, three bays. Brick end chimney flush with wall, one-story shed-roof structure to rear with flush brick end chimney, 6/9 sash first floor, shallow gable roof; mid-nineteenth century.

700 Block

Like the other blocks of Catherine Street, the 700 block contains small brick and frame houses from the mid-nineteenth century to the early twentieth century, typical of the laborers' houses in the area.

705 (south side)

Cottage: frame, one story. Steep gable roof facing street, lean-to wing at east side, massive brick chimney against rear gable, later porch. Early to mid-nineteenth century.

ner

#### East Leigh Street

300 Block

The majority of the north side of this block has been demolished.

308 (north side), Ellett House

Townhouse: pressed brick, two stories with raised basement, three bays. Relatively unaltered townhouse, porch with box columns and with sheaf-of-wheat railing, entrance with narrow sidelights and transom, 6/6 sash, wood lintels, box cornice, retains rear service wing with two-story gallery with square columns and box railing, gable roof. Greek Revival; 1853; built for Charles C. Ellett.

#### 200 Block

215-211 (south side)

Three-Unit Townhouse Row: two stories, Nos. 211 and 213 have two bays each, No. 215 has three bays, sash altered -- Nos. 211 & 213 -- square corner blocks in lintels, box cornice, Georgian Revival porches added to Nos. 211 & 213. Greek Revival; 1842.

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#### East Leigh Street (Cont'd.)

100 Block

This is an excellent example of a substantial, well-maintained late nineteenth-century residential block. All of the houses are two stories, and most are unaltered.

110 A (north side), Maggie L. Walker House Listed on the Virginia Landmarks Register (April 15, 1975), the National Register of Historic Places (May 12, 1975), and as a National Historic Landmark. See National Register of Historic Places nomination form, April 1975.

100 (north side)

Townhouse: pressed brick, two stories with raised basement, round tower, arched entrance bay. Brick porch chamber with dressed stone arch on first floor, balcony with small recessed porch with two round-headed-arch openings on second floor, continuous dressed stone trim on tower forms lintels and sills of windows. Romanesque Revival; late nineteenth century. Important visually as corner element.

#### 00 Block

22 (north side) Sharon Baptist Church Brick, one story with full raised basement, three-part facade. Pointed arch windows, bell tower. Twentieth century Gothic; 1904. Congregation established 1887; the bell tower is an important visual element for the corner.

21 (south side), Old Armstrong High School; Richmond Trade Training Center School: brick,  $2\frac{1}{2}$  stories. Brick pilasters at corners, brick belt course, mansard roof, segmental-arch windows first floor, round-headed windows second floor and dormers, four-story corner tower. Second Empire, 1871. Built as Richmond Normal School.

#### West Leigh Street

00 Block

1 (south side) All Saints Pentecostal Church Brick, one story, three-bay front. Steep gable roof with wide dormers, roundheaded, stained-glass windows, rose window over entrance. Romanesque Revival; 1870. Built originally as Saint Philip's Protestant Episcopal Church, important as an example of a small-scale neighborhood church. Forio No. 10-300a (Rev. 10-74)

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#### West Leigh Street (Cont'd.)

3 (south side)

Store: brick, two stories. Early storefront is intact although first-floor entrance doors removed, modillion cornice with dentil molding. Mid-nineteenth-century commercial.

16 (south side)

Townhouse: pressed brick, two stories. Three-sided bay tower, Georgian Revival porch. Early twentieth century. Residence of A. W. Holmes, Grand Secretary of True Reformers, early twentieth century founder of National Ideal Benefit Society.

#### 100 Block

There are a number of ante-bellum brick houses on the north side of this block, but most have been significantly altered.

102 (north side)

Townhouse: pressed brick, two stories. Three-sided bay, scrolled-wood entrance hood covered by Georgian Revival porch. Queen Anne; late nineteenth century. Residence of P. B. Ramsey, one of two black dentists in city in 1905.

110 (north side)

Townhouse: pressed brick, two stories, three bays. Turned-work (Eastlake) porch with spindle frieze, segmental brick arches above windows, bracketed cornice. Late Victorian Italianate; late nineteenth-century residence of Miles Debbress, a black civic leader of the late nineteenth century.

112 (north side)

Townhouse: brick, two stories with full raised basement, three bays. Ornate metal window hoods, doors and windows altered. Mid-nineteenth century. 1905 real estate office of John Braxton.

122 (north side) First Battalion, Virginia Volunteers Infantry Armory Armory: pressed brick, two stories. Projecting one-bay central tower with arched opening, flanked by two-bay, two-story wings that terminate in small corner towers; stone watertable, belt course, and lintels; ornate terra cotta frieze, brick battlements. Castellated; 1899.

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#### West Loigh Street (Cont'd.)

200 Block

216 (north side), Ebenezer Baptist Church Stuccoed brick, two stories, three bays. Tetrastyle portico with Ionic capitals added during renovation, square bell tower behind portico, spire removed. Italianate with Georgian Revival alterations; 1870s. First and largest black church in Jackson Ward.

300 Block

300 (north side)

Townhouse: pressed brick, two stories, three bays. Altered. Late Victorian Italianate; late nineteenth century. Residence of H. L. Harris, Grand Secretary of Masons in late nineteenth century. Also one of the residences of John H. Adams, Jr., Common Council member in 1871.

312 (north side)

Townhouse: frame, two stories, three bays. Late Victorian Italianate; late nineteenth century. Residence of Henry J. Moore, contractor and Common Council member in the period 1880-1890.

East Jackson Street

The houses on Jackson Street are primarily of a smaller scale (mostly two stories) than those previously described.

00 Block

Northwest Corner of Jackson and First Street (north side)
Three-Unit Townhouse Row: pressed brick, two stories, two bays each unit. Entrance with narrow sidelights and transom, small Greek Revival porches, dressed stone sills and lintels, 6/6 sash, passage constructed between two westernmost houses, stepped gables, one-story masonry shed-roof service wing at rear of each house--probably original. Greek Revival; 1850.

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#### West Jackson Street

00 Block

16 (north side)

Townhouse: brick, two stories, three bays. Later porch added to front, twostory frame service wing with exterior end chimney. Greek Revival; mid-nineteenth century.

18-22 (north side)

Townhouses: constructed originally as three identical brick, two story, two-bay houses, No. 20--stepped gables; No. 22--stepped gables, 6/6 sash; No. 18 raised to three floors late nineteenth century. Greek Revival; 1848. Example of identical row, with one house enlarged and altered in later style. No. 20 was the residence of Ellsworth Storrs, founder of Red Circle grocery chain.

19 & 21 (south side)

Townhouses: frame, two stories, three bays each house. No. 19--brick exterior end chimney; small-scale frame dwellings; mid-nineteenth century.

34-36 (north side)

Two-Unit Townhouse Row: Frame, two stories. Early twentieth century. Residence of John Shepherd, leading black politician at the turn of the century.

#### 100 Block

101 (south side)

Townhouse: brick, two stories with raised basement, three bays. Flemish-bond walls; two-course watertable; 9/9 sash first floor, Federal architrave; eight-panel door, raised panels with applied molding; late nineteenth-century porch; second floor added or rebuilt. Federal with later additions; 1800-1825.

105 (south side)

Townhouse: brick, two stories, three bays. Flemish-bond walls, late nineteenth-century porch, sash altered, bracketed cornice. Federal; 1800-1825. First black chartered bank housed in this building; also residence of W. W. Browne, founder (in 1881) of the United Order of True Reformers.

133 (south side), Meredith House

Townhouse: frame, two stories, four bays. Eastermost bay--later addition, sash altered 2/2, later porch. Federal; built before 1813; built for William Mann.

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East Duval Street

The north side of Duval Street, with the exception of Sixth Mount Zion Raptist Church, was demolished in the 1950s for Interstate 95.

00 Block

25-23 (south side)

Two-Unit Townhouse Row: brick, two stories, No. 23 has three bays, No. 25 has two bays. Flemish-bond walls, north section probably original, south section completed shortly after, 9/9 sash first and second floors, splayed plastered jack arches, two course, molded-brick cornice, late nineteenth century porch. Federal; c. 1817.

#### West Duval Street

00 Block

14 (north side), Sixth Mount Zion Church Brick, one story on full raised basement. Round-headed windows; altered 1917, then enlarged by C. Russell who added corner tower. Romanesque Revival later altered; 1887.

#### Cameo Street

Cameo Street is composed primarily of smaller-scale ante-bellum laborers' houses.

700 Block

709-711 (east side)

Two-Unit Townhouse Row: brick, two stories, two bays each unit. Center chimney, box cornice, shallow gable roof; wid-nineteenth century.

715-717 (east side)

Two-Unit Townhouse Row: stuccoed brick, two stories, two bays each unit, center chimney, box cornice, shallow gable roof, brick front stuccoed later. Mid-nineteenth century.

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#### North Henry Street

500 Block

507-509 (east side)

Two-Unit Townhouse Row: pressed brick, two stories, three bays each unit. Twin porches with fluted Corinthian columns, modillion cornices, balustrades; diamond-pane sash, bracketed cornice. Georgian Revival; early twentieth century.

#### North Monroe Street

500 Block

512 (west side), Lacy Raised Cottage Dwelling: brick, one story with full raised basement, two bays. Two-story gallery, 6/6 sash, hipped roof, box cornice. Greek Revival; 1852. One of last remaining raised cottage dwellings in the city.

#### Saint James Street

500 Block

520 (west side)

Townhouse: pressed brick, two stories, three bays. Segmental brick arches above windows, bracketed cornice. Italianate; late nineteenth century. Home of Dr. J. E. Jones, professor at Virginia Union University in late nineteenth century.

600 Block

605-621 (east side)

Ten-Unit Townhouse Row: pressed brick, two stories, three bays each unit. Modillion cornice, turned-work porches. Georgian Revival; early twentieth century. Important as an early example of block planning, end units of block project to act as terminals; double house forming middle of block also projects.

J. 1.

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#### North 1st Street

500 Block

This is an intact block primarily of brick, two-story late nineteenth-century Italianate townhouses with wooden, Eastlake style porches.

700 Block

The west side of this block consists of a late nineteenth-century residential two-story townhouse row with bracketed cornices and Eastlake style porches.

Ny

#### North 2nd Street

This street traditionally has been the major commercial street in Jackson Ward.

500 Block

511

513 (east side), Giles Jackson's Law Office

Townhouse: pressed brick, two stories, three-sided tower and entrance bay. Entrance with double ten-panel doors, gabled door hood supported by scrolled brackets with pendants, mouse-tooth brick belt course. Queen Anne; late nineteenth century.

524 (west side), Taylor House

Townhouse: pressed brick,  $2\frac{1}{2}$  stories, Mansard roof, three-story tower with elongated domed roof, stone string courses. Queen Anne; late nineteenth century. Residence of W. L. Taylor, leader in the True Reformers.

600 Block

603 (east side)

Commercial Building: brick, pilastered wood storefront, some original trim. Mid-to late nineteenth century. Brown's Photography Gallery, leading photographer in Jackson Ward in late nineteenth and early twentieth centuries.

#### 700 Block

700 (west side), (former) Richmond Beneficial Insurance Co. Commercial Building: pressed brick, three stories, three-bay front. Entrance flanked by Roman Doric pilasters--segmental arch above with urn and garland decorations, brick quoins, stone jack arches with keystones, modillion cornice. Georgian Revival. One of largest commercial buildings in ward.

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#### North 2nd Street (Cont'd.)

724 (west side)

Commercial building: pressed brick, two stories. Pilastered wood storefront, raised panels on pilasters, original windows with recessed wood panels below; front doors replaced. Italianate; mid-to late nineteenth century. Operated as Leonard's Drug Store from the 1870s through the early twentieth century.

725 (east side)

Townhouse: stucco, two stories, three bays. An early house largely altered, stucco added, diamond-pane sash, Georgian Revival porch, window arrangement altered, four-pane sash windows in gable. Built 1827-1828. Formerly C. P. Hayes Funeral Home.

170

#### North 3rd Street

500 Block

515-517 (east side), Mitchell House Two-Unit Townhouse Row: pressed brick, two stories, three bays each unit. Bracketed cornice, cast-iron porches, Italianate. One of the residences of John Mitchell, Jr., founder (in 1883) of the <u>Planet</u>, a weekly newspaper.

#### 600 Block

The east side of this block is an extant mid-to late nineteenth-century commercial block.

612 (west side), Tucker Cottage
Townhouse: frame, 1½ stories with raised basement. Gambrel roof with shed
dormers of unequal width, two-bay narrow-gable, end facing 3rd Street, 4/4
sash window in gable, three-bay side elevation--sill of easternmost firstfloor window is original, beaded siding, end chimney removed or cut down,
later additions, raised-seam tin roof, basement walls stuccoed. Vernacular,
circa 1792. One of two gambrel-roof cottages remaining in Richmond, moved
from original site at 3rd and Leigh Streets.

616 (west side), Third Street Bethel A. M. E. Church Listed in the Virginia Landmarks Register (February 18, 1975) and the National Register of Historic Places (June 5, 1975). See National Register of Historic Places nomination form, January 1975.

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#### North 3rd Street (Cont'd.)

617 (east side)

Commercial building: pressed brick, three stories, three bays. First-floor storefront dates from late nineteenth century; 6/6 sash--second and third floors. Greek Revival; 1850-1860; built by Bernard Good.

623 (east side)

Commercial building: pressed brick, two stories. Metal modillion cornice, cream-colored brick, original storefront intact. Georgian Revival; early twentieth century.

700 Block

The east side of the 700 block was destroyed by the 3rd Street access ramp from Interstate 95, and access to the west side by automobile is difficult. Many of the houses are frame and are deteriorating rapidly.

704-706 (west side)

Two-Unit Townhouse Row: brick, two stories, two bays each unit. Sash altered 2/2, bracketed cornice, later porch. Greek Revival-altered; mid-ninateenth century.

722 (west side)

Townhouse: frame, two stories. Although significantly altered by the addition of a modern frame wing that obscures the original front elevation, the steep gable roof indicates a late eighteenth- or early nineteenth-century dwelling.

#### North 4th Street

600 Block

611-617 (east side)

Four-Unit Townhouse Row: pressed brick, two stories, two bays each unit. Narrow bracketed cornice, interior alley through passage between 615 and 617. Italianate; mid-to late nineteenth century. Small-scale townhouse row.

621 (east side)

Townhouse: frame, two stories with raised basement, three bays. lean-to at rear of building, two exterior end chimneys flush against east wall, Georgian Revival porch. Greek Revival; mid-nineteenth century.

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#### North 4th Street (Cont'd.)

700 Block

708-710 (west side)

Two-Unit Townhouse Row: pressed brick, two stories, three bays each unit. Entrances with narrow sidelights and transom, later porches, box cornice. Greek Revival; mid-nineteenth century.

#### North 5th Street

700 Block

700 (west side)

Townhouse: frame, two stories with raised basement, three bays. Porch has coupled columns and cast-iron railings, 6/6 sash, bracketed cornice, covered with asbestos siding. Residence of E. R. Carter, member of Richmond Common Council in 1880s. Italianate; mid-nineteenth century.

705 (east side), Fifth Street Baptist Church Brick, one story on raised basement, seven-bay front. Cream-colored brick, pedimented tetrastyle portico. Georgian Revival; 1926. Built to replace an earlier church of 1886; an important building historically and a local landmark.

710 (west side), Ellett House

Townhouse: brick, two stories, three bays. Windows altered, Georgian Revival porch, box cornice, shallow gable roof. Greek Revival-altered; 1855; built by Charles Ellett. Residence of Dr. James H. Johnston, early President of Virginia State College.

715 (east side)

Townhouse: brick, two stories, three bays. Later cornice added, 6/6 sash, Georgian Revival porch. Greek Revival; built 1853, altered 1860; built by John Reeve.

\[\]

ADAMS ST
BELOK RD
CHAMERS LAMME
GILMIZ ST
J.DAM ST
N MADISON ST
MUNICIPALITY

PILICE ST.
PULLIAMST
ST. PETERST
SMITH ST

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#### SIGNIFICANCE

in the area including his residence at 00 Clay Street (1832). This, like its contemporaries since destroyed, was among the finer homes built in Richmond during the early nineteenth century. Houses such as these stood on large lots and are shown with numerous dependencies on mid-nineteenth-century maps.

The more notable early houses include the plain two-story frame structure at 133 W. Jackson Street built before 1813. It was the residence of a coachmaker, William Meredith, and his family from 1856 until 1897 and later of R. G. Forrester, influential member of the International Order of St. Luke (see below). Among the early examples are the simple brick row at 23-25 East Duval Street and the William Young House (Barham House) at 313 West Marshall Street (both pre-1820). 136-138 West Clay Street was built in 1820 by Isaac Goddin and was the home of James M. Taylor from 1836-1856. Taylor was a well-known auctioneer and property owner as well as being a leader of Methodism in the city.

Black association with the neighborhood dates from the ante-bellum era, when a number of free blacks had their homes in "Little Africa," around the area of West Leigh Street near where Ebenezer Church is situated and in the 200-400 blocks of Duval Street. The frame, gambrel-roof Roper Cottage, at 400 West Duval, was moved to Goochland County in the mid-1950s, when it was threatened by construction of the Richmond-Petersburg Turnpike.

Ante-bellum Richmond was attractive to free Negroes who, as a perusal of the manuscript census and tax records indicates, were very resourceful in making jobs for themselves. The late nineteenth-century black commercial renaissance in Richmond was not unrelated to this and other realities of the 1840s and 1850s. One out of eight free Negroes in late ante-bellum America lived and worked in Virginia, and better than one in eight free residents of Richmond was Negro.

Nor, in the case of Richmond, are the free Negroes the whole story. A number of slaves were owned by their own kinsmen, and many more were working outside the orthodox slave regime. Richmond was the center for the hiring out--often the self-hiring out--of slaves: a modification of the system which often provided personal income and private lodging for the slave and certainly encouraged attention to craftsmanship and frugality.

Whatever their legal status, a substantial majority of blacks of working age in antebellum Richmond were acquiring skills and business experience that prepared them for the political and economic opportunities newly available following emancipation. It is perhaps not so surprising that many were able to compete successfully with their fellow craftsmen elsewhere in the country during an era when America experienced great commercial and industrial expansion. Form No. 10-300a (Rav. 10-74)

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#### SIGNIFICANCE

The Church and auxiliary beneficial societies of ante-bellum times loomed large in the life of the black community through the first World War and beyond. The latter, descended in spirit from the Burying Ground Society of the Free People of Color of the City of Richmond (circa 1815), formed the nucleus for Negro insurance companies. As social institutions, such groups functioned to assuage the pain and fear of lifectestitution, illness, loneliness—and of death. They fostered black solidarity and self sufficiency; and the Church, especially, provided the organization and much of the leadership for post-Emancipation activities of Richmond's blacks.

Two daughter churches of old First African Baptist dominated Negro life in Jackson Ward during the generation following the War. Ebenezer Church was formed in 1856 and occupied a small frame church building from 1858 into the 1870s, when the present structure was completed at the corner of Leigh and Judah Streets. A Negro public school operated from the basement of the earlier structure in the late 1860s. In later years, six additional churches evolved from the membership of Ebenezer.

Sixth Mount Zion Church, formed a decade later largely from members of First African, erected their building at 14 East Duval Street in 1888. Their pastor, the Reverend John Jasper, developed a national reputation for his rhetorical skills and strict fundamentalism. He was a natural leader with an indominatable spirit as witness his extensive ministry before and during the War. Jasper preached to vast rural congregations as well as those in Richmond and Petersburg, and to congregations of blacks and whites, including Confederate soldiers—notwithstanding the laws to the contrary or his status as a slave hired out for factory work.

Much to the chagrin of his neighbor, Richard Wells, the pastor of Ebenezer, Jasper developed, as a vehicle for his teaching, a sermon purporting to prove, among other things, that the earth was flat, square, and stationary. "The Sun do nove and the Earth am still" outraged Mr. Wells and others of refined and literary sensibilities, the more so for endearing Jasper to thousands both literate and unlettered.

Other notable churches in Jackson Ward include the Hood Temple (formerly Clay Street Methodist Church) Adams and Clay, designed by Albert West, noted Richmond architect of the mid-nineteenth century. The diminutive Romanesque style structure at the corner of Leigh and St. James (St. Philips P. E. Church from 1870-1959) now houses All Saints Pentecostal Church. The much-altered Mosby Memorial Church, located at 9 East Clay Street, was built as a Friends Meeting House in 1866. The church house at Fifth and Jackson Streets was built in 1926 on the original site of old Fifth Street Baptist, founded in 1888. Third Street Bethel A.M.E. Church is listed separately on both the Virginia Landmarks Register and National Register of Historic Places.

During the period which saw the formation of these churches, the small neighboring

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#### SIGNIFICANCE

community of ante-bellum free black property owners, entrepreneurs, journeymen, and laborers was transformed: "Little Africa" became one of the most significant and influential black communities in America. The role of the church and the pre-emancipation beneficial societies in this process may be seen personified in the careers of the Reverend W. F. Graham, pastor of the Fifth Street Baptist Church, and the Reverend W. W. Browne, noted temperance reformer; as well as in the spirit of the Independent Order of St. Luke.

Mr. Graham was the founder and president of the American Beneficial Company, later merged into the Richmond Beneficial located at 700 North Second Street. W. W. Browne was founding president of the most famous of the Negro beneficial and self-help societies, the Grand Fountain of the United Order of True Reformers. The True Reformers were chartered in 1883 to establish a mutual benefit fund. By 1889 they had opened a bank at 105 West Jackson Street (Browne's residence), the first black-organized bank to be chartered in the United States.

Giles B. Jackson (with homes--both destroyed--at 205 East Leigh and at 818 North Fourth Streets and his attorney's office at is North Second Street) drafted the charter for the True Reformers Bank and assisted Browne, et al; as the Reformers established first a mercantile and industrial association, then a weekly newspaper, The Reformer; a hotel; a home for the elderly; a building and loan association; and a real estate agency. The True Reformer Bank survived the panic of 1893 to become the largest black-controlled financial institution in the country by 1907.

In 1893 B. L. and W. H. Jordan left the True Reformers Bank to organize the Southern Aid Society, which grew steadily, coming into its own with the World-War-I-induced increase of employment and payroll among Virginia blacks. The Southern Aid Society moved from 527 North Second Street to its present building at the corner of Third and Leigh Streets in 1931. The Jordans and other former officers of the True Reformers continued the work of the Order after the latter was disbanded in 1910.

True Reformers had overextended themselves and the resources of their bank in supporting myriad social and commercial activities that provided benefits for a generation of blacks all over the eastern seaboard. The bank and the Order itself collapsed in 1910. The Grand Fountain's headquarters building at 604-608 North Second Street has since been destroyed.

A second major beneficial society of the period was the Independent Order of St. Luke. The St. Luke emulated the True Reformers in founding a bank, weekly magazine, and varied commercial and retail enterprises. The Order had floundered until 1899, when it became the vehicle for one of the most successful careers in modern Richmond history. Maggie Walker (nee Mitchell) was the first woman bank president in the United

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#### SIGNIFICANCE

States. Unlike that of the True Reformers, her St. Luke's Penny Savings Bank continues to the present day in the form of its successor, the Consolidated Bank and Trust Company.

Mrs. Walker's successes—as an educator, philanthropist, and businesswoman—are well known and are fittingly commemorated in the high school which bears her name, the Consolidated Bank, and her home at 110 East Leigh Street. The latter, a National Historic Landmark, is a focal point for current preservation efforts in Jackson Ward.

The subsidiaries of the St. Luke's and True Reformers Orders may stand for many similar business organizations established in the Ward during the half-century following Appomattox. Their beneficial and charitable functions have been superceded by those of national fraternal orders and public authorities, but their contribution to the community and to the careers of many individuals ensure their place in history.

John Mitchell, Jr. and his "worthy rival and yet good friend," Giles B. Jackson, epitomize the nexus of business, fraternal, and political activity existing in Jackson Ward circa 1890-1920. Jackson cultivated the more conservative style; cooperating with the reemergent Conservatives in Virginia politics and devoting proportionately more of his time to Negro industrial growth. He was coauthor of The Industrial History of the Negro Race in America; moving force behind the Negro Exhibit at the Jamestown Tercentennial Exhibition of 1907; and ubiquitous advocate for black business interests at the seats of government in Washington and Richmond.

Jackson figured prominently in True Reformer enterprises (see above) and his personal business activities were extensive. When Jim Crow made its appearance in Virginia, Booker T. Washington turned to Giles Jackson, as to a kindred spirit, for advice on mounting a legal challenge to the new ordinances. Washington might have been less comfortable coordinating efforts with Jackson's neighbor, the flamboyant and fiery John Mitchell, Jr. However radical he sometimes appeared, Mitchell had the intelligence and business acumen to gain prominence in national banking circles. He was at one time an officer and the sole Negro member of the American Bankers Association.

As Grand Chancellor of the Colored Knights of Pythias and editor of the Richmond Planet, Mitchell became a power to be reckoned with in the city for two score years. The Knights, formed in 1880, rapidly gained preeminence among the secret societies in Richmond. These were not unlike contemporary white groups except insofar as their ritual included African elements and their purposes were shaped by the needs and condition of the Freedmen.

From their "Castle" at the corner of Third and Jackson Streets, the Pythians exercised an influence felt throughout the Ward. Whether appearing elaborately costumed and on horseback for parades or somewhat more mutedly providing music for a funeral, the

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#### SIGNIFICANCE

Knights were an important element of any social event. They provided a color and pagentry still vividly remembered by older residents. It was under the auspices of the Pythians that John Mitchell opened his Mechanics Savings Bank. A contemporary of Maggie Walker's bank, the Mechanics was located at 511 North Third Street, next to Mitchell's Italianate style attached residence at 515-517 North Third.

Mitchell was a leader of the predominantly black Republican organization which, if weak elsewhere, totally dominated the politics of Jackson Ward from 1871 into the twentieth century. Mitchell or his allies, including the Irishman James Bahene, continually represented Jackson Ward on the Common Council of the City of Richmond during the latter part of the nineteenth century.

Among blacks serving on the Common Council in addition to Mitchell were: John H. Adams, Jr., who lived at 300 West Leigh Srreet, near to his father, a well-to-do contractor since ante-bellum times; Nelson P. Vandervall; and Richard G. Forrester, whose residence at 133 West Jackson was built before 1813 and remains one of the oldest in the Ward. E. R. Carter, resident at 700 North Fifth Street; Henry J. Moore of 312 West Leigh; and Alpheus Roper, 400 West Duval Street, also served on the Council. Josiah Crump served both on the Common Council and as an Alderman; his residence at 736 North Third Street is no longer standing. Councilman S. W. Robinson lived at 18 West Leigh Street, several blocks from 623 North Third Street, which later housed the law office of his distinguished grandson, S. W. Robinson, Jr., now a federal judge.

The younger Robinson served as attorney for plaintiffs in the Prince Edward County desegregation suit decided in conjunction with Brown v. Board of Education of Topeka in 1954. He was also prominent in subsequent suits brought against the Richmond public schools. A half-century earlier, James H. Hayes, an attorney with offices at 414 North Third Street, organized the Negro Educational and Industrial Association to foster a test case against the then newly enacted discriminatory legislation. Jackson Ward continued to provide political leadership even during the time when there appeared to be no black politics.

John W. Mitchell, Jr. throve on adversity. With the appearance of Virginia's Jim Crow laws (commencing circa 1899-1904) involving seating on common carriers, and in response to the disfranchisement following upon the State Constitutional provisions of 1902, he began to espouse a forceful "race rights" policy in the pages of his newspaper. It was apparently the appeal of this program which made the <u>Planet</u> a newspaper of national circulation. The paper merged in 1938 with the Baltimore <u>Afro-American</u> and is still published in Jackson Ward.

Although operating within the context of an uncertain political situation, Jackson

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#### SIGNIFICANCE

Ward retained considerable economic and social strength during the early twentieth century. If Negroes suffered from the fallout of Social Darwinism in the political sphere, they were of the age in their pursuit of wealth and happiness through selfhelp, work, education, and thrift. Whether in spite, or to a degree because, of the separatist philosophy of the day, black entrepreneurs and professional people remained active.

The first generation of the new century was politically bleak. From the time of the elimination of Jackson Ward as a political entity and the failure of the Street Car Boycott (1905-1906) through the adoption of Virginia's strong anti-lynching law in 1928, politics had little "good news" for Jackson Ward or blacks in general. By 1931, the Virginia Supreme Court of Appeals began to reverse unfair and irregular application of the existing laws by election officials and registrars. In 1935, blacks began to reappear as veniremen for Richmond courts.

Throughout the intervening period, Negro barbers, continuing a tradition dating back to ante-bellum times, competed successfully for white patronage, as did black haber-dashers, livery stable owners, caterers and restauranteurs. Within the Richmond black community--increasingly synonymous with the area north of Broad from Bowe to Tenth Streets--undertaking establishments, beauty parlors, hotels, building and loan and real estate companies were also highly successful. There were in addition a large number of groceries, repair shops, drugstores, and other small commercial enterprises in and near Second Street

Educational facilities for blacks included Armstrong High School, for many years the only Negro high school in the city. Armstrong was a successor to the Negro Normal School and took over that institution's Second-Empire style building, constructed at First and Leigh Streets in 1871. Virginia Union University (chartered 1900) was developed on a campus just to the northwest of Jackson Ward. It incorporates several formerly independent schools; one, Hartshorn Memorial College (for Women), was located just to the west of the Jackson Ward Eistoric District from 1884 to 1932.

Many Virginia Union faculty members lived in Jackson Ward, notably Dr. Joseph E. Jones, at 520 North St. James Street, and Dr. J. J. Smallwood, whose residence was at 102 East Leigh Street. Dr. James H. Johnston, long-time educator and an early president of Virginia State College in Petersburg, lived in the Ward at 104 East Leigh Street and later at 710 North Fifth Street. Among their contemporaries, all of the practising black lawyers and the vast majority of medical personnel and other professionals lived and, for the most part, practised in the Ward.

By the middle-third of the twentieth century, the German Catholics of old St. Mary's

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Parish and the substantial Jewish community of Jackson Ward had joined the exodus begun by earlier generations of whites. In the 1930s, Jackson Ward-as extended substantially to the north, west, and east of the present district-was home to 8,000 black families, and to these alone. It was the center of Negro religious life and education; it was, indeed, the social, economic, and political hub of central Virginia's black population.

Every city has a 'street' that serves as the social, as well as commercial, center of Negro life. Along one or more blocks of second Street in Richmond. . . , the 'crowd' may be found almost every evening. For a block or two everything is Negro; here is a little oasis-- 'our street.'

#### from The Negro in Virginia, 1940.

Jackson Ward has suffered considerably during the past generation. The northern part of the neighborhood was cut off, with much physical destruction, by the Turnpike developed in the 1950s. The eastern portion has been leveled in favor of the Coliseum and expanded facilities for medical education at the Health Sciences center of Virginia Commonwealth University (VCU-MCV). Buffeted by every affliction visited on inner city neighborhoods elsewhere, it has also paid the price of its own success. Segregation in a sense made Jackson Ward, and the leadership nurtured in the Ward helped to unmake segregation.

Virginians have been passing one another for decades: rural people moving in to take the places of young, active city dwellers now removed to the suburbs. The automobile and affluence, compounded in the case of Jackson Ward by changed law and changing custom, have crippled many a historic neighborhood. And yet, Jackson Ward remains the place of residence, of worship, and of business for a substantial portion of Richmond's black community. John Mitchell's successors continue to edit the Richmond Afro-American here. The Vice Mayor and other prominent blacks continue to practise law from offices on or adjacent to Second Street.

Jackson Ward's pleasant residential streets are beginning to attract the attention of persons who recognize the structural and aesthetic value of the period houses to be found there. Efforts to preserve the identity and character of the area are underway.

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GEOGRAPHICAL DATA

Verbal Boundary Description

The 130 acres comprising Jackson Ward Historic District are bounded by a line beginning at a point in center of intersection of Duval and Belvidere Streets, thence extending approximately 300 feet SW along center of Belvidere Street to center of intersection of said street with alley between Catherine and Leigh Streets;

Thence extending approximately 500 feet NW along center of abovementioned alley to center of intersection of said alley with Gilmer Street;

Thence extending approximately 600 feet SW along center of Gilmer Street to center of intersection of said street with alley between Clay and Marshall Streets;

Thence extending approximately 500 feet SE along center of abovementioned alley to center of intersection of said alley with Belvidere Street;

Thence extending approximately 400 feet SW along center of Belvidere Street to center of intersection of said street with alley between Marshall and Broad Streets;

Thence extending approximately 1000 feet SE along center of abovementioned alley to center to intersection of said alley with Madison Street;

Thence extending approximately 200 feet NE along center of Madison Street to center of intersection of said street with Marshall Street;

Thence extending approximately 400 feet SE along center of Marshall Street to center of intersection of said street with Brook Road;

Thence extending approximately 300 feet N along center of Brook Road to center of intersection of said road with alley between Marshall and Clay Streets;

Thence extending approximately 2000 feet SE along center of abovementioned alley to center of intersection of said alley with Fourth Street;

Thence extending approximately 700 feet NE along center of Fourth Street to center of intersection of said street with Leigh Street;

Thence extending approximately 200 feet SE along center of Leigh Street to center of intersection of said street with alley between Fourth and Fifth Streets;

Thence extending approximately 400 feet NE along center of abovementioned alley to center of intersection of said alley with Jackson Street;

Thence extending approximately 400 feet SE along center of Jackson Street to center of interpretation of security with alley between Fifth and Sixth Country.

Form No. 10-3003 (Rev. 10-74)

### UNITED STATES DEPARTMENT OF THE INTERIOR NATIONAL PARK SERVICE

# NATIONAL REGISTER OF HISTORIC PLACES INVENTORY -- NOMINATION FORM

FOR NPS USE ONLY	
RECEIVED	,
JUL 30 1976	

CONTINUATION SHEET #30

ITEM NUMBER 10 PAGE 2

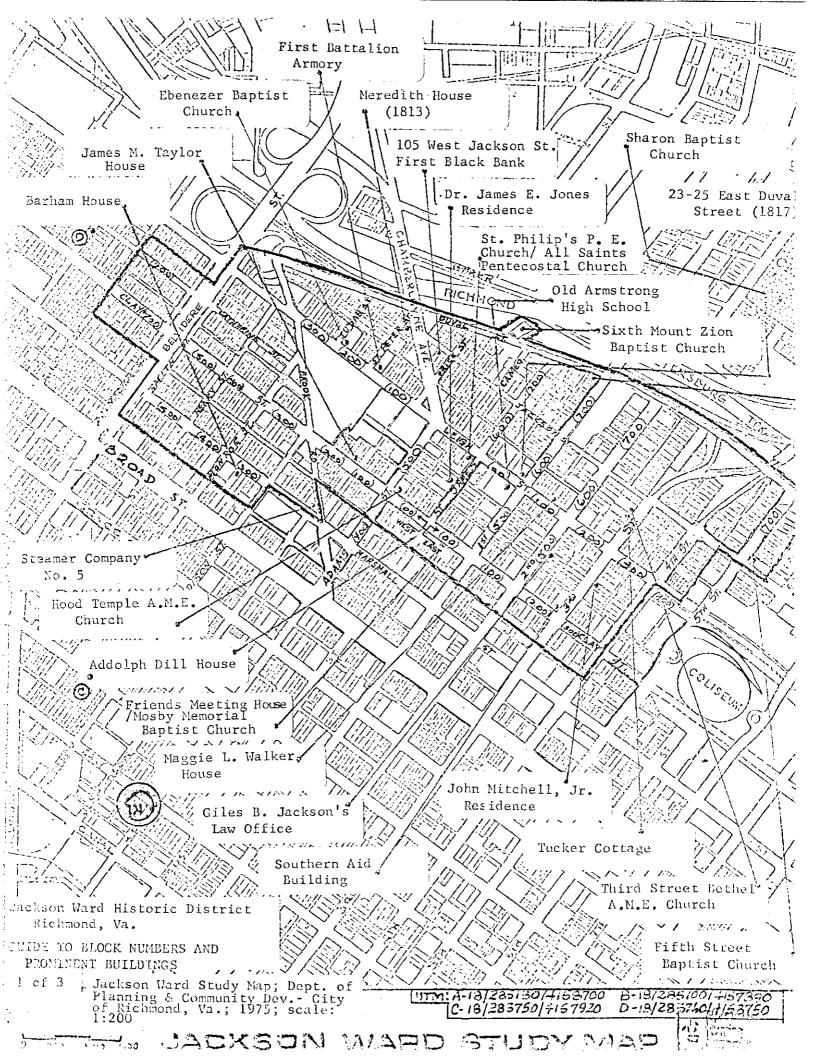
GEOGRAPHICAL DATA (Cont'd.) · Verbal Boundary Description

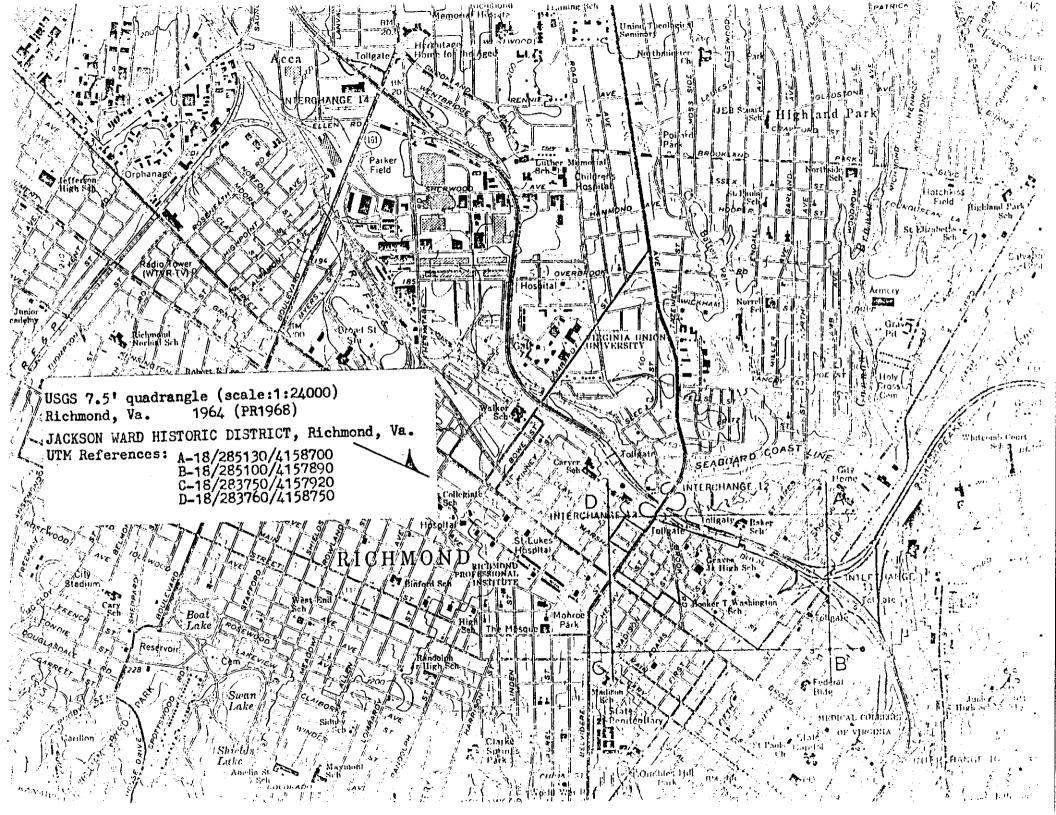
Thence extending approximately 600 feet NE along center of abovementioned alley to beyond center of intersection of said alley with Duval Street to north side of said street;

Thence extending approximately 2000 feet NW along north side of Duval Street to intersection of said street with Cameo Street;

Thence extending approximately 100 feet NE, then approximately 100 feet NW to concrete wall; then approximately 100 feet SW to north side of Duval Street--thus encompassing Sixth Mount Zion Church;

Thence extending approximately 1800 feet WNW along north side of Duval Street to point of origin.





19NPS Form 10-900 (Oct. 1990) OMENo, 10024-0018

### United States Department of the Interior National Park Service

# NATIONAL REGISTER OF HISTORIC PLACES REGISTRATION FORM

This form is for use in nominating or requesting determinations for individual properties and districts. See instructions in How to Complete the National Register of Historic Places Registration Form (National Register Bulletin 16A). Complete each item by marking "x" in the appropriate box or by entering the information requested. If any item does not apply to the property being documented, enter "N/A" for "not applicable." For functions, architectural classification, materials, and areas of significance, enter only categories and subcategories from the instructions. Place additional entries and narrative items on continuation sheets (NPS Form 10-900a). Use a typewriter, word processor, or computer, tocomplete all items.

1. Name of Property		<u>-</u>	
Historic Name: <u>Jackson Ward Historic District</u>	(Additional Documentation)		
Other names/site number: VDHR File No. 12	7-237		
2. Location			
street & number <u>roughly bounded by Gilm</u>	er, Marshall. North Third and Leigh	Streets	
city or town Richmond		vicinity	y <u>NIA</u>
state Virginia code VA co	ounty Richmond (Independent City	<u>')</u> code <u>760</u> zij	code <u>23220</u>
3. State/Federal Agency Certification			
As the designated authority under the National Historic  I request for determination of eligibility meets the docur meets the procedural and professional requirements se meets I does not meet the National Register Criteria.  Inationally statewide locally. II (I See continuation	nentation standards for registering propertie t forth in 36 CFR Part 60. In my opinion, the . I recommend that this property be conside	s in the National Register of le property	ation Historic Places and
Signature of certifying efficial/Title			1/24/19
Director. Virginia Department of Historic Resources State or Federal agency and bureau			
In my opinion, the <b>properly</b> $\square$ <b>meets</b> $\square$ does not meet th	e National Register criteria. ( 🛭 See continua	ation sheet for additional com	ments,)
Signature of certifying official/Title		Date	
State or Federal agency and bureau			
4. National Park Service Certification			
I, hereby certify that this property Is:  entered in the National Register See continuation sheet. determined eligible for the National Register See continuation sheet determined not eligible for the National Register removed from the National Register other (explain)	Signature of the Keeper	Da	te of Action

Jackson Ward historic District (Additional Documentation) Name of Property		Richmond, Virginia City and State			
					5. Classification
Ownership of Property (Check as many boxes as apply)	Category of Property (Check only one box)		Number of Resources within Property (Do not include previously listed resources in the count)		
		Contributing	Non-contrib	uting	
private public-local public-State public-Federal	<ul><li>building(s)</li><li>district</li><li>site</li><li>structure</li><li>object</li></ul>	3 0 0 0 0 3	0 0 0 0	buildingssitesstructuresobjectsTotal	
Name of related multiple property (Enter "N/A" if property is not part	rty listing	listed in	of contributing resources the National Register		
_ N/A		N/A			
6. Function or Use	· · · · · · · · · · · · · · · · · · ·			<del></del>	
Historic Functions (Enter categories from instruction Cat: COMMERCE Sub	s) : Office	(Enter catego	Functions ries from instructions)  MMERCE Sub: C	Office	
COMMERCE Professional		HE	ALTH CARE C	Office	
HEALTH CARE Office		VA	CANT/NOT IN USE		
7. Description					
Architectural Classification (Enter categories from instructions)  MODERN MOVEMENT		` _	ries from instructions)  CONCRETE		
		walls _	CONCRETE; BRICK		
		-	STONE: SLATE		
		roof _	ASPHALT		
	<del></del>	other _			

**Narrative Description** 

(Describe the historic and current condition of the property on one or more continuation sheets.)

Jackson Ward historic District	(Additional Documentation)
Name of Property	, <del></del>

Richmond, Virginia	
City and State	

	ent of SignificanceApplicable National Register Crite	
	n one or more boxes for the criteria qualifying the or National Register listing)	(Enter categories from instructions)
` <b>≡</b> A	Property is associated with events that have made a significant contribution to the broad patterns of our history.	ETHNIC HERITAGE: Black
] в	Property is associated with the lives of persons significant in our past.	
□ c	Property embodies the distinctive characteristics of a type, period, or method of construction or represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity whose components lack individual distinction.	Period of Significance 1800 - 1970
α []	Property has yielded, or is likely to yield, information important in prehistory or history.	
	onsiderations in all the boxes that apply.)	Significant Dates 1970
[] c	owned by a religious institution or used for religious purposes. removed from its original location. a birthplace or a grave. a cemetery.	Significant Person (Complete if Criterion B is marked above) N/A  Cultural Affiliation N/A
U E	a reconstructed building, object, or structure. a commemorative property.	
<b>■</b> G	less than 50 years of age or achieved significance within the past 50 years.	Architect/Builder
	Statement of Significance ne significance of the property on one or more continuation	on sheets.)
	Bibliographical References	
Bibliogra Cite the t	phy pooks, articles, and other sources used in preparing this	form on one or more continuation sheets.)
P	documentation on file (NPS) reliminary determination of individual listing (36 FR 67) has been requested. reviously listed in the National Register reviously determined eligible by the National Register esignated a National Historic Landmark ecorded by Historic American Buildings Survey	Primary Location of Additional Data  State Historic Preservation Office Other State agency Federal agency Local government University Other
	ecorded by Historic American Engineering	Name of repository :

Jackson Ward historic District (Additional Documentation)	 <del>-</del>	Richmond, Vi		
Name of Property		City and State	<b>:</b>	
10. Geographical Data				<u> </u>
Acreage of Property				
Acreage of Froperty				
UTM References				
(Place additional UTM references on a continuation sheet)				
Zone Easting Northing 1	3			
2 See continuation sheet.	4			
See continuation sheet.				
Verbal Boundary Description (Describe the boundaries of the property on a continuation sheet.)				
Boundary Justification (Explain why the boundaries were selected on a continuation sheet.)				
11. Form Prepared By				
name/title Kathryn Colwell, James Hill, Susan Horner, F	Kathy Lucia	, Mary Harding Sa	dier	
organization Sadler & Whitehead Architects, PLC		date <u>17, Jun</u>	e 2002	
street & number 800 West 33rd Street		telephone804	-231-5299	
city or town Richmond		state VA	zip code _23225-353	33
Additional Documentation				
Submit the following items with the completed form:				
Continuation Shorts				
Continuation Sheets				
Maps				
A USGS map (7.5 or 15 minute series) indicating	the propert	y's location.		
A Sketch map for historic districts and properties	having larg	e acreage or nume	rous resources.	
Photographs				
Representative black and white photographs of the	ie property.			
Additional items (Check with the SHPO or FPO for any additional items)				
Property Owner				
(Complete this item at the request of the SHPO or FPO.) name				
street & number	telephone			
city or town	state	zip code		
				- 4 -

Paperwork Reduction Act Statement: This information is being collected for applications to the National Register of Historic Places to nominate properties for listing or determine eligibility for listing, to list properties, and to amend existing listings. Response to this request is required to obtain a benefit in accordance with the National Historic Preservation Act, as amended (16 U.S.C. 470 et seq.).

Estimated Burden Statement: Public reporting burden for this form is estimated to average 18.1 hours per response including the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding this burden estimate or any aspect of this form to the Chief, Administrative Services Division, National Park Service, P.O. Box 37127, Washington, DC 200137127; and the Office of Management and Budget, Paperwork Reductions Project (10240018), Washington, DC 20503.

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(0_0e)		

OMB Approval No. 1024-0018

United States Department of the Interior National Park Service

National Register of Historic Places
Continuation Sheet

Jackson Ward Historic District (Additional Documentation) City of Richmond, Virginia

Section number \_\_7 Page \_\_5

#### SUMMARY DESCRIPTION

The Jackson Ward Historic District is north of downtown Richmond, Virginia in an area roughly described by Duval Street on the north, Third Street on the east, Marshall and Clay Streets on the south and Gilmer Street on the west. This additional documentation is submitted in order to expand the significance of the Jackson Ward Historic District to include the Civil Rights era (1940-1970). A majority of the buildings associated with the institutions and people who contributed to the Civil Rights movement were constructed prior to 1940. Most have architectural or historical significance established in earlier survey efforts. A majority of these properties are typical of the Italianate and Greek Revival buildings found throughout the neighborhood. This amendment identifies buildings specifically associated with African Americans in Richmond who fought to win the civil rights guaranteed to them by the Constitution.

We identify thirteen properties connected with the Civil Rights movement and eight properties associated with community leaders or the business reinvestment within the Ward during this era. Three of these buildings are changed from non-contributing to contributing status. Two of them, the Virginia Mutual Beneficial Insurance Company Building and Doctors Thornton and Howlette Medical Offices are modern buildings designed by local architects. The third, The Sheffield Building, is an Italianate duplex with a prominent one-story modern addition.

#### **DETAILED DESCRIPTION**

#### Inventory of Historic Buildings in Jackson Ward

The 1976 National Register of Historic Places nomination form for the Jackson Ward Historic District includes a general inventory that highlights buildings with particular architectural or historical significance. In 1987 and 1992 the City of Richmond and the Department of Historic Resources coordinated a building-by-building inventory with survey forms documenting the full range of buildings and styles represented in the Ward. Styles in the historic district include mid-19<sup>th</sup> century Greek Revival houses, Italianate dwellings and commercial buildings, an Art Deco theater, and the modern office buildings we propose to add to the list of those considered significant. Since completion of the survey in 1992, dozens of historic buildings in the historic district have been lost through demolition, fire, and neglect. The historic district was placed on the National Trust's 2001 list of *America's Eleven Most Endangered Places*. Recent loss of the offices at 623 North Third Street, from which Oliver Hill and his law partner Spottswood Robinson prosecuted desegregation cases that were part of the landmark Brown v. Board of Education decisions, makes clear the ongoing threat to the most significant landmarks of the Civil Rights era.

#### Where Did the Civil Rights Movement Take Place in Richmond

The Civil Rights movement in Richmond was marked by the intense efforts of Jackson Ward lawyers, businessmen, professionals and others to establish equitable treatment through integration, voter registration, and loyalty to the black-owned businesses. The movement's success was a result of a community of activists who organized and inspired others in meetings, sermons, and social gatherings that took place in historic

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(8-86)	

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<b>United States</b>	Department of the Interior
<b>National Park</b>	

# National Register of Historic Places Continuation Sheet

Jackson Ward Historic District (Additional Documentation)
City of Richmond, Virginia

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buildings throughout Jackson Ward. The Ward had become the heart of Richmond's African American community during the century following the Civil War. As noted by the National Trust: "Founded by free blacks and immigrants, Jackson Ward became a gerrymandered voting district in the 1870s that kept those groups voting in one area. When early 20th-century Jim Crow laws separated the races, the people of Jackson Ward created a self-sustaining economy that made the area famous as the 'Black Wall Street' and alive with theaters, clubs and restaurants."

With few exceptions, the buildings cited in the following inventory predate the Civil Rights movement. Their style, scale, and material derive from their mid-19<sup>th</sup> to early-20<sup>th</sup> century origins. The three buildings selected for addition to the inventory have a modern aesthetic. In their deliberate choice of contemporary architectural idiom, businessmen Booker T. Bradshaw and Clarence Townes, Sr. at the Virginia Mutual Life Insurance Company Building; John Howlette, MD and William S. Thornton, MD at 206 – 208 East Clay Street; and James E. Sheffield, Esq. At 12 – 14 West Leigh Street; boldly asserted a commitment to the Ward's future vitality.

## United States Department of the Interior National Park Service

# National Register of Historic Places Continuation Sheet

Jackson Ward Historic District (Additional Documentation)
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#### AN INVENTORY OF BUILDINGS IN THE JACKSON WARD HISTORIC DISTRICT THAT ARE ASSOCIATED WITH THE CIVIL RIGHTS ERA

The three buildings whose status has changed from "non-contributing" to "contributing" are indicated with a double asterisk (\*\*)

# First Street, North 400 Block (Even)

420

ca.1880, Italianate, 2-story, brick residence converted to commercial use, stretcher bond, 2 bays, corbelled brick and molded cornice, rock-faced stone lintels, projecting bay, 1/1 windows, central chimney. Law offices of civil rights attorneys Roland Ealey, Herman Benn, and M. Ralph Page in the 1960s. In 1963, the Richmond Branch of the NAACP was located in the building.

#### **Second Street, North**

#### 500 Block (Even)

516

ca. 1900, Italianate, 2-story, brick commercial building, stretcher bond, 2 bays, bracketed cornice, paired 1/1 windows, molded storefront cornice intact. Annex for the Hotel Harris, one of three African American hotels associated with North 2<sup>nd</sup> Street entertainment and nightlife during the 1940s and 1950s.

528

The Hippodrome Theatre, ca. 1934, Art Deco, 2-story, stucco, symmetrical façade, with paired central entry doors. This theater was a popular entertainment center from the 1930s through the 1950s. The Hippodrome attracted the "greats" of the era, including Duke Ellington, Billie Holiday, and Louis Armstrong.

#### 500 Block (Odd)

537

ca. 1890, Italianate, 2-story, brick commercial building, stretcher bond, 4 bays, pilasters and cornice on storefront, 1/1 windows with segmental arches, bracketed cornice at roof line. Office of Benjamin A. Cephas Real Estate for over thirty years. Cephas was the first African American appointed to the Richmond Public Library Board.

539-541

Hotel Eggleston, ca. 1900, Italianate, 3-story, brick hotel, 6 bays, Permastone facing on second and third floors, metal balconies on second and third floors, 1/1 windows with segmental arches. Hotel owned by Neverett Eggleston, Sr. The Hotel Eggleston and its restaurant Neverett's Place were popular meeting spots for Richmond African Americans in the 1940s and 1950s.

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Jackson Ward Historic District (Additional Documentation)
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#### 600 Block (Odd)

603

ca. 1900, Vernacular, 2-story, brick commercial building, stretcher bond, 4 bays, plain cornice. This building housed Richmond's premier African American photography firm, Brown's Photography.

### Third Street, North

600 Block (Even)

614

Third St. Bethel AME Church, ca. 1857, Italianate, 1-story, 4 bays, 1-story front porch of brick and wood with a brick balustrade and Tuscan columns, lancet arch windows with tracery, corbeling and other decorative brickwork, towers on both front corners, gabled roof. One of Jackson Ward's most active churches in the Civil Rights movement. The church was the site for numerous organizational meetings.

## Clay Street, East

1 Block (Odd)

11

ca. 1878, Italianate, 2-story, brick residence, stretcher bond, 3 bays, 1-story porch with iron posts, brackets, frieze and balustrade, 2/2 segmental-arch windows, decorative vents. Home of Clarence W. Newsome, civil rights attorney with the firm of Hill Tucker & Marsh.

#### 100 Block (Even)

110-112\*\*

The Virginia Mutual Benefit Life Insurance Company Building was designed by Tiffany Armstrong, architect with David Warren Harwicke & Partners. It was built in 1963 for community leaders and businessmen Booker T. Bradshaw and Clarence Townes, Sr. to house their insurance company business headquarters and other tenants, including the neighborhood ABC store. Until the mid-1990s when Jackson Center was built nearby on 2<sup>nd</sup> Street, this was the largest office building in Jackson Ward. The Virginia Mutual Beneficial Life Insurance Company Building, at the northwest corner of Second and Clay Streets, has one of the most prominent sites in Jackson Ward. The owners and their architect consciously rejected the idea of constructing a building in a traditional idiom. Their goal was to create a modern structure that would speak to the future rather than the past.

The building has the stripped-down aesthetic of the International Style. A four story rectangular box constructed of pre-cast concrete, the building is organized by windows aligned in the open vertical strips between the shallow projections of the U-shaped wall panels. The base of the building is clad with a slate veneer, except at the south-facing entry elevation. A wall of store-front doors and windows is recessed behind an arcade created by two square columns. Most of the building's interior has been altered over time due to the changes of business and retail tenants. The elevator lobbies are distinguished by beige and blue-green mosaic wall panels and,

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Jackson Ward Historic District (Additional Documentation)
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#### Clay Street, East, cont.

110-112\*\* cont.

at the small entry lobby a suspended ceiling of bronze and blue-green, anodized, aluminum squares.

Virginia Mutual Benefit Life's founders were community leaders who supported the Civil Rights Movement with significant financial contributions and business expertise.

### 200 Block (Even)

206-208\*\*

Doctors Howlette and Thornton Medical Offices. Optometrist John Howlette, MD and podiatrist William S. Thornton hired architect C. Page Highfill of Hyland and Highfill architects in 1961 to design their offices at 206-208 East Clay Street. The project pairs long, narrow one-story buildings along a canopied walk. The buildings are brick boxes, designed in the modern style with very little ornament. Corrugated panels shelter the serpentine walk leading from the property's gated entry to an outdoor fountain centered between the two offices. The narrow garden lining this path is planted with topiary and other ornamental shrubs. The site presents an unexpected oasis in the city. The entry bay in each of the buildings is delineated with a wall panel of painted diagonal siding. In the case of this unusual property, these two understated buildings become a backdrop to the property's primary feature, its garden.

John L. Howlette and William S. Thornton were both prominent doctors and community leaders. Thornton was one of the founding members of the Crusade for Voters.

212-214

Southern Aid Society of Virginia Building, ca. 1910, Renaissance Revival, office building, brick, stretcher bond, 4-story, 7 bays, first floor pediments, Corinthian pilasters, 1/1 windows with arches and keystones, rustication, cornice with modillions, parapet roof. Headquarters for the Southern Aid Life Insurance Company and numerous professional offices including the law firm of civil rights attorneys Hill Tucker & Marsh.

# Clay Street, West 400 Block (Odd)

419

ca. 1883, Italianate, brick residence, stretcher bond, 2-story, 2 bay, brick stoop, pilasters and entablature around entrance, large bowed window, cornice with dentils and frieze with vents. Home of Earl W. Davis, a Field Representative for the CIO (Congress of Industrial Organizations) who was a leader in the Crusade for Voters.

# National Register of Historic Places Continuation Sheet

Jackson Ward Historic District (Additional Documentation)
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# Clay Street, West cont. 500 Block (Odd)

503

ca. 1850, Greek Revival residence, brick, stretcher bond, 2-story on a raised basement, 3 asymmetrical bays, sidelights and transom at front door, Greek Revival porch with square posts, plain frieze and cornice, 6/6 windows, stepped parapet roof. Home of Roy West, community leader and Richmond Public Schools administrator during desegregation West served on the Richmond City Council and was elected Mayor in 1982.

# Leigh Street, East 100 Block (Even)

102

ca. 1880, Italianate, brick residence, stretcher bond, 2-story, 3 bays, Neo-Classical porch with Corinthian columns and turned balustrade, 1/1 segmental-arch windows, bracketed cornice with decorative vents. Home of Dr. J.J. Smallwood, professor at Virginia Union University and active in the Civil Rights movement.

104

ca. 1880, Italianate, brick residence, stretcher bond, 2 story, 3 bays, porch with decorative iron posts, balustrade and brackets, cornice with modillions, shed roof. Home of James H. Johnston, President of Virginia State College, Petersburg, VA, who was active in the Civil Rights movement.

118

ca. 1880, Italianate, brick residence, stretcher bond, 2 story, 3 bays, stone stoop, 2/2 windows, full-length windows on the first floor, bracketed cornice with decorative vents. Law offices in late 1950s of civil rights attorneys Oliver Hill, Martin C. Martin, and James R. Olphin.

## 100 Block (Odd)

117

ca. 1880, Italianate, brick residence, stretcher bond, 2 story, 3 bays, Victorian Vernacular porch with turned posts and balustrade and sawn brackets, double front door, 2/2 segmental-arch windows, bracketed cornice with dentils and decorative vents. First Richmond law office (1939) of prominent civil rights attorney Oliver W. Hill.

## Leigh Street, West

#### 1 Block (Even)

12-14 \*\*

Sheffield Building, ca. 1880 with 1965 addition, Italianate, brick office building, stretcher bond, 2 story, 7 asymmetrical bays, one-story section with fixed sash windows, 2/2 windows in two story section, bracketed cornice. James E. Sheffield moved his law practice to the Sheffield Building in 1965 as part of a larger effort to revitalize Jackson Ward. In 1974, Sheffield became the first African American Virginia Circuit Court judge.

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Jackson Ward Historic District (Additional Documentation) City of Richmond, Virginia

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### Leigh Street, West, cont.

- 18
- ca. 1890, Queen Anne, brick residence, stretcher bond, 2 story, 3 bays, Neo Classical porch with Corinthian columns and simple turned balustrade, 1/1 windows with rock-faced stone lintels, projecting turret, false mansard slate roof. Home of S.W. Robinson successful Jackson Ward real estate attorney.
- 216
- Ebenezer Baptist Church, ca. 1858, Greek Revival, brick clad with stucco, Ionic columns form stone and brick portico, arched stained glass windows on sides, shingle roof with pediment gable, cupola with Palladian louvered vents and four spires, iron fence. The 1963 civil rights march on Richmond City Hall to draw attention to inequities in employment opportunities originated at this church.

# St. James Street 500 Block (Even)

520

ca.1880, brick residence, stretcher bond, 2-story, 3 bays, Victorian Vernacular wood porch 3 bays wide with square posts and balustrade and sawn brackets, full length windows on first floor, 2/2 segmented-arch windows upstairs, bracketed cornice with decorative grills. Home of Dr. Joseph E. Jones, professor at Virginia Union University who was active in the Civil Rights movement.

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#### 8. STATEMENT OF SIGNIFICANCE

Jackson Ward, the historic heart of Richmond's African American community, was profoundly involved in and affected by the civil rights struggle. It was the locus from which dozens of desegregation cases were filed by the law firms of Hill Robinson & Martin, and later Hill Tucker & Marsh. The Ward served as an incubator for black businesses. Excluded from participation in white civic and business affairs, blacks developed interdependent relationships that gave rise to businesses whose success garnered political and economic clout to the black community. The business and political leadership nurtured in the Ward helped to unmake segregation.

Jackson Ward is significant on the national level under *National Register Criterion A* for its critical role in the Civil Rights movement. The Historic District meets *Criterion Consideration G* because of the broad significance of the Civil Rights movement in our nation's history. This extension of the district's period of significance, 1940 to 1970, begins at the time when Jackson Ward's civil rights strategy had matured among the black leaders and action resulted. The era continues through the years of the Civil Rights movement and ends in 1970, the year District Court Judge Robert R. Merhige handed down his landmark ruling that students would be bussed to achieve racial integration of public schools.

#### HISTORIC CONTEXT

### Jackson Ward's Historic Designation

The Jackson Ward Historic District was listed on the Virginia Landmarks Register in April 1976 and the National Register of Historic Places in June 1978 because: "The area is broadly significant to students of black, urban, and business history and is unique for having been the center of Negro community life in Richmond during a watershed era for that race and the nation." In June 1978, the exceptional significance of Jackson Ward was formally recognized when it was awarded National Historic Landmark status. The neighborhood was comprehensively surveyed by Tyler Potterfield with the City of Richmond and David Edwards of the Virginia Department of Historic Resources in 1987 and 1997. The 1976 Nomination Form authored by Margaret Peters, Calder Loth, H. Peter Pudner, and Joseph Yates, notes that the Period of Significance for the Jackson Ward Historic District extends from 1800 – 1899 and from 1900 (with no concluding year). This addendum proposes to specifically extend the period of significance to include the Civil Rights Era beginning in 1940 and to designate 1970 as the period's terminus.

#### Background

Segregation developed in Jackson Ward due to restrictive public policies and local attitudes concerning the rights of African Americans following the Civil War. By 1940, the Ward had become home to approximately 5000 African Americans. It was the heart of Richmond's black commercial, cultural, and religious life. In effect, Jackson Ward functioned politically and economically as a "separate city" within the larger metropolis. Following the example of Maggie Lena Walker and the reconstruction era organizations that grew out of the black churches and fraternal organizations, black citizens of the Civil Rights era continued to give back to

# National Register of Historic Places Continuation Sheet

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strengthen their community. They took pride in their race, and ultimately banded together to overcome obstacles imposed by both legal segregation and the equally limiting de facto, or customary segregation.

Ironically, as monumental achievements were made by Jackson Ward attorneys litigating civil rights cases through the court system, Richmond's city planners forever altered the physical fabric of the community through an expansive urban renewal program. Residents could do little to influence the path of the proposed roads and Jackson Ward soon found itself bisected, both vertically and horizontally, by the broad concrete expanses of the I-95 expressway and the Belvidere Street extension. Though urban renewal removed some of the area's most blighted residential properties, it also demolished the physically cohesive community. By 1970, the impact of the city's urban renewal program and blacks' recently won civil rights became evident as many businesses closed or relocated. But even as the physical fabric was lost, the black community continued to identify with Jackson Ward. As a result, efforts to revitalize the neighborhood are underway so that the Ward can nurture another proud generation.

The years 1940 to 1970 represent an era of unprecedented black achievement as successful litigation brought the integration of public schools and African Americans were elected and appointed to numerous political and judicial positions for the first time in our nation's history.

#### Prominence in the fight for Civil Rights

#### Litigation

Jackson Ward was the locus from which dozens of desegregation cases were filed by the law firm of Hill Martin & Robinson, later Hill Tucker & Marsh. Senior partner Oliver W. Hill served as head of the National Association for the Advancement of Colored People's (NAACP) Virginia legal defense team. Over time the firm has operated out of several offices, all located within Jackson Ward. The initial thrust was to prove that the Plessy v. Ferguson (1896) decision, which had established 'separate but equal,' was unconstitutional. Hill and partner Spottswood W. Robinson III represented the plaintiff in the Prince Edward County desegregation case Davis v. County School Board of Prince Edward County (1951). This case became one of five that formed Brown v. Board of Education of Topeka, Kansas (1954). Hill and Robinson joined New York NAACP attorney Thurgood Marshall in successfully arguing Brown v. Board of Education of Topeka, Kansas before the United States Supreme Court, thus effectively ending legal school segregation.

Virginia's response to *Brown* was to create policies that collectively became known as "Massive Resistance." Hill's firm vigorously filed law suits opposing the legislature's efforts to perpetuate segregation. In a 1999 interview, Hill stated that suits were filed against Virginia school systems in sixty jurisdictions—representing more litigation than any other state in the Union. Among the acts of Virginia's General Assembly were the Gray Plan (1956) that provided tuition for private school and empowered School Boards to determine pupil school placement and the Stanley Plan (1956) composed of thirteen actions designed to prevent integration. Hill and his legal team responded by filing cases against school boards in Arlington, Norfolk, Newport News, and Charlottesville. Before these cases could be settled, the General Assembly moved to establish independent Pupil Placement Boards. Within the year, Hill successfully obtained a court order temporarily stopping this practice in Richmond. However, the test came when, as the 1958 school year began, six African American

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students were denied placement in the all white school of their choice. Attorney Martin A. Martin (partner in Hill Martin and Robinson) represented the plaintiffs in this case *Warden v. Richmond School Board* (1958). Though no settlement was reached until 1961, success was achieved in August 1960 when two African American students were admitted to all white Chandler Elementary School.

Another Richmond School Board tactic to prevent integration was to create "dual attendance zones." Eleven African American parents filed a class action suit to challenge this procedure in *Bradley v. Richmond School Board* (1961). Attorneys Samuel W. Tucker and Henry Marsh III of Hill Tucker & Marsh successfully argued this case and in 1963 the Freedom of Choice Plan was established. However, few students chose to attend a school outside of their district and due to Richmond's segregated residential patterns, schools remained segregated. Tucker and Marsh filed the pivotal case leading to Judge Robert R. Merhige, Jr.'s 1970 landmark ruling in which he ordered the bussing of black and white students to schools outside of their neighborhoods in order to stimulate racial integration of public schools. The ruling would have a profound effect on Jackson Ward and on the nation at large.

Civil rights cases originating from the offices of Jackson Ward attorneys were not limited to school desegregation. Three other examples involved public school teachers' salaries, courtroom seating, and segregation of restaurants. In 1941, Hill teamed with fellow NAACP attorneys Leon Ransom, District of Columbia, and Thurgood Marshall, New York, to represent the black Richmond Teacher's Association in obtaining black teacher salaries equal to those paid white teachers. Immediately upon hearing the suit had been filed, the Richmond School Board passed a pay parity plan. In 1963, the firm of Ealey & Page successfully represented the plaintiff before the U.S. Supreme Court whereby the Court ruled that segregated seating in courtrooms was unconstitutional. The offices of attorneys Roland D. Ealey, and M Ralph Page were located at 420 N. 1st Street (JWHD, NHL)<sup>4</sup>. Also in 1963, Hill associate Clarence W. Newsome represented student demonstrators who had been arrested during a lunch counter demonstration.

#### Voter Registration

Litigation was but one tool used by Richmond's African American population to gain their civil rights; voter registration was a second method. In 1936, only 1,527 blacks were registered to vote. Increasing this number was difficult as many blacks felt their vote did not count. By 1940, through efforts of Jackson Ward dentist Jesse M. Tinsley, President of the Richmond branch NAACP, and Roscoe C. Jackson of the Democratic Voter's League, the number of blacks voting rose by 50 percent. The progressive mayoral candidate Gordon B. Ambler won, with the support of the black vote. During his administration, he began to address long-standing community problems. The power of the vote was not lost on Richmond's black citizens and in 1948 they helped elect attorney Oliver W. Hill as the first African American to serve on the City Council since Reconstruction.

In the wake of *Brown*, Virginia's legislature mounted an offense against both school integration and the organizations that fought for integration—particularly the NAACP. In 1956, the Richmond Crusade for Voters was founded to sustain the NAACP's efforts in registering voters. Founders were William S. Thornton, John Mitchell Brooks, and William Fergusen Reid. The Crusade's voter-registration campaign during 1957 was known as the "Miracle of Richmond." The drive resurrected an antebellum tradition whereby one black taught

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another to read. The motto "each one teach one" now became "each one reach one." The highly successful campaign resulted in a 30 percent increase in black voter registration by 1958. Alarmed by the success of the voter registration campaigns, the Virginia legislature introduced "blank sheet" registration under the guise of testing literacy. The Richmond Afro-American, the Richmond Planet countered from its offices at 301 E. Clay Street (now demolished) by launching a "Boomerang for Bigots" program aimed at educating blacks on how to fill in the blank form thus lessening the impact of the blank sheet registration maneuver.

The organizational minds behind the Crusade were educated black professionals who met daily in strategy sessions. Many meetings were held at Slaughters Hotel at 527-529 North 2<sup>nd</sup> Street (now demolished) and later at the 533 Club next door (now demolished). The commitment was substantial since the Crusade's goal was not only to register voters, but also provide voter education, endorse candidates, establish precinct clubs, and provide transportation to the polls. By the 1962 city council elections, the Crusade had become so effective that seven of the nine candidates it endorsed were elected. In 1966, African Americans represented 48 percent of Richmond's population and 34 percent of all registered voters.

Critical to the voter registration and other civil rights campaigns were the city's black churches—fifteen of which were located in Jackson Ward. These churches, particularly Fifth Street Baptist Church, 705 N. 5<sup>th</sup> Street (now demolished), Third Street Bethel African Methodist Episcopal, 616 N. 3<sup>rd</sup> Street (NRHP)<sup>7</sup>, and Leigh Street African Methodist Episcopal, 500 E. Leigh Street (now demolished) were the location for mass meetings. But all churches were critical to the effort, with their pastors playing key rolls.

### Non-violent protest

Both the Richmond Branch and Virginia Chapter of the NAACP had their offices in Jackson Ward. NAACP staff worked zealously with professors and students at Virginia Union University, pastors, and local businessmen in organizing civil rights protests. Individual actions also garnered attention. As early as 1939, local NAACP president Jesse Tinsley and his wife Ruth defied Richmond's social conventions by entertaining First Lady Eleanor Roosevelt in their home at 531 N. 4<sup>th</sup> Street (now demolished). Richmond's first organized protest occurred in February 1960 when students from Virginia Union University staged the first "sit-in" at F. W. Woolworth's lunch counter. Other lunch counters targeted included G. C. Murphy, Thalhimer's, and Peoples Service Drug. Later, while picketing Thalhimer's department store, three blacks were arrested. Those arrested included Ruth Tinsley, whom though not picketing was standing near the store and refused to comply with a police officer's order to "move on." By June 1963, sixty restaurants had dropped racial barriers. Demonstrations continued through the year. In August, picketers marched from Ebenezer Baptist Church, 216 W. Leigh Street (JWHD, NHL), down Broad Street to demand increased job opportunities within city government. And later, between 300 and 400 demonstrators gathered at the black YMCA, 214 E. Leigh Street (now demolished), for a bus caravan to D.C. to join the March on Washington.

Richmond's demonstrations differed from those in other states in that they proceeded with few arrests and without violence. But Richmond had not been a passive player in the Civil Rights movement. It has been suggested that the leaders of Richmond's Civil Rights movement were primarily conservative businessmen who had learned to work within the system and who had confidence in achieving the goal through legal means. What is evident is that local black leaders were effective in devising strategies that achieved the desired

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outcome without provoking violence. Their actions contributed significantly to passage of the Civil Rights Act of 1964 and the Voting Rights Act of 1965. Important local successes resulting from their efforts are the "firsts" for African Americans who worked and lived in Jackson Ward.

- 1948 Oliver W. Hill became first African American elected to the Richmond City Council since Reconstruction
- 1953 Booker T. Bradshaw elected as first African American on the Richmond School Board
- 1964 Spottswood W. Robinson, III became first African American appointed as a judge on the U.S. District Court in Washington. In 1966, Robinson became first African American appointed to the U.S. Court of Appeals for the District of Columbia.
- 1964 Dr. William Ferguson Reid and Dr. William M.T. Forrestor became the first African Americans admitted to the Richmond Academy of Medicine
- 1964 Benjamin A. Cephas became first African American appointed to the Board of the Richmond Public Library
- 1966 William Ferguson Reid became first African American elected to General Assembly in modern times
- 1966 Henry Marsh III elected to the City Council and in 1977 became Richmond's first African American Mayor
- 1974 James E. Sheffield appointed as first African American Virginia Circuit Court Judge

#### Prominence of the Business Community

The Jackson Ward business community, with Second Street as its heart, developed as a result of local African Americans' determination to preserve their access to goods and services even as the white community was busy erecting Jim Crow laws to limit such access. Early key businesses, such as Maggie Walker's St. Luke's Penny Savings Bank (NRHP, NHL), and the Southern Aid Society (JWHD, NHL), had grown out of fraternal organizations and self-help societies with ties to the black church. By example, these institutions established a precedent—that business owners would give back, reinvest in their community. This commitment is clearly noted in the financial support and organizational acumen that businessmen provided to the Civil Rights movement. It is also seen through the expansion of individual businesses that reinvested in the physical fabric of Jackson Ward by building new structures and redeveloping old.

Coupled with a business's obligation to the community was the black consumer's responsibility to support local black establishments. Local pastor Dr. Gordon Blaine Hancock, Moore Street Baptist Church, noted that because blacks "possessed little political clout, national, state, and local governments could ignore their complaints... By spending where possible in Negro enterprises, the Negro could at least provide jobs for some members of his group and, at the same time, use his leverage as a consumer to coerce white merchants to hire Negroes." Dr. Hancock coined the phrase "Double Duty Dollar" to express this concept. Similar economic solidarity campaigns of the time included the NAACP's "Buy Black", frequently advanced in the black newspaper the Afro-American and Richmond Planet, and "Don't Buy Where You Can't Work." The emphasis on taking pride in and reinvesting in one's race became for many a natural thought pattern and

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ensured a vibrant, supportive community even as daily experiences resulting from Richmond's staunch segregationist policies were severely limiting.

For the black business owner, profitability remained a challenge, as black businessmen had to overcome competition from white business owners, who frequently had both the capital and credit to offer wider selection and better prices, and also an increasingly blighted streetscape created by overcrowding and poverty within the Ward. In spite of these challenges, black owned businesses in Jackson Ward, and particularly along 2<sup>nd</sup> Street, thrived. Few consumer needs would have gone unfulfilled as businesses included established insurance and financial institutions, the offices of emerging young professionals, funeral parlors, real estate offices, hotels, restaurants, clubs, theaters, and service providers including barber and beauty shops, repair shops, dry cleaners and tailors. Residents remember the Jackson Ward of the 1940s and 1950s as "jumpin" and never closing.

Among Jackson Ward's established insurance companies were Richmond Beneficial Life Insurance and Southern Aid. In keeping with the self-help tradition, two insurance men Booker T. Bradshaw and Clarence Townes Sr. established the Virginia Mutual Benefit Life Insurance Company in 1933; with headquarters in the Southern Aid Building at 214 E. Clay Street (JWHD, NHL). Over the next thirty years their business thrived and expanded to Washington D.C. and other Virginia cities. In the early 1960s plans were developed for a new headquarters building. Desirous of being a positive force within the Jackson Ward community, Bradshaw and Townes purchased property prominently located on the corner of Second and Clay Streets for their building and employed progressive Richmond architect Tiffany Armstrong. At a time when Jackson Ward's commercial center was declining, Bradshaw and Townes gave Armstrong instructions to design a building that conveyed their faith in Jackson Ward's viability as a commercial center. The Virginia Mutual Benefit Insurance Building at 110-112 E. Clay Street was dedicated in 1963 and remains a symbol of the achievements that earned Jackson Ward the reputation as "the Black Wall Street" in the 1900s. Its founders were leaders in the community serving on numerous boards. Their individual achievements include Mr. Bradshaw's election to the Richmond School Board in 1953, the first African American to serve in that capacity since Reconstruction, and Mr. Townes being cited by President Eisenhower for his service to the Department of Commerce's Advisory Committee on Minority Business Development.

Prominent financial institutions included the Consolidated Bank and Trust, successor to Maggie Walker's St. Luke's Penny Savings Bank. In 1966, Consolidated's president J. Jay Nickens, Jr. co-founded the Richmond Improvement Coordinating Council. The Council, noting that 75 percent of Richmond's black population was low income and unskilled, assisted these individuals, through education, to obtain better jobs and housing conditions. In current times, Consolidated continues to exert influence in the Jackson Ward community from its prominent building at 327-329 N. 1<sup>st</sup> Street (constructed in 1974, after the proposed period of significance).

During the Civil Rights era, numerous young black professionals established practices in Jackson Ward. Because Virginia colleges would not admit African Americans to their graduate programs, many students had received tuition assistance from the legislature to study out of state. They now returned and began dismantling the system that had enabled a segregated society. Most prominent among these was Oliver W. Hill who established a law practice with Spottswood W. Robinson III and Martin C. Martin in 1943. Their firm Hill Robinson & Martin was located first in the Consolidated Bank & Trust Building at 327 N. 1st Street

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(demolished) and later at 623 N. 3<sup>rd</sup> Street (demolished). During the 1960s, when Samuel W. Tucker and Henry L. Marsh III joined forces with Hill, their firm Hill Tucker & Marsh was located in the Southern Aid Building at 214 E. Clay Street (JWHD, NHL). In addition to these firms' monumental success in litigating desegregation cases, the individual attorneys also achieved prominence. S. W. Robinson became the first African American to be appointed a judge on the U.S. District Court in Washington (1964). Later he was the first African American judge on the U.S. Court of Appeals for the District of Columbia (1966). In 1977, Henry Marsh III was elected as Richmond's first black mayor. In 1999, Oliver Hill was awarded the Presidential Medal of Freedom in recognition for his role as one of the "lions" of the Civil Rights movement. In 1900, Hill received the American Bar Association's highest award in recognition for his leadership in the Civil Rights movement.

Attorney James E. Sheffield, moved to Jackson Ward in 1965 when he chose to become part of the area revitalization effort. He purchased a vacant and dilapidated building at 12 - 14 West Leigh Street to house his law practice. The redevelopment project expanded the structure toward the street to accommodate additional office space. Other professional offices relocating to the Sheffield Building following this remodeling were those of attorney Harrison Bruce, physician Charles Cummings, and dentist Anthony Malloy. In 1974, attorney Sheffield became the first African American to be appointed as a Circuit Court Judge in Virginia.

Among the notable doctors and dentists establishing a practice in Jackson Ward were podiatrist William S. Thornton, optometrist John L. Howlette, physician William Fergusen Reid, and dentist Jesse M. Tinsley. Dr. Thornton and Dr. Howlette established their practices at 415 North 2nd (now demolished) in the 1950s. Throughout their lifetimes they worked to create opportunities for African Americans. Dr. Thornton, cofounder of the Crusade for Voters in 1956, served as its president for many years. Dr. Howlette, the second African American to be licensed to practice optometry in Virginia, in 1968 helped co-found the predominantly black National Optometric Association. Their ongoing commitment to the community was demonstrated in 1963 when they jointly invested in the construction of a modern office building at 206 - 208 East Clay Street. The prominent Richmond architectural firm of Hyland and Hyfill designed the building—a striking one-story structure with landscaped courtyard.

Also active in civil rights activities were Doctors Reid and Tinsley. William Fergusen Reid had joined Thornton and Brooks in founding the Crusade for Voters in the 1950s. In 1967, Dr. Reid was elected as the first African American to serve in the Virginia House of Delegates. Dr. Reid's office was located at 611 Chamberlayne Ave. (demolished). Jesse M. Tinsley served as president of the Richmond branch NAACP for fifteen years and then as state NAACP president for twenty years. Dr. Tinsley's dental practice at 402½ N. 2nd Street (outside JWHD) also housed the headquarters of the Richmond NAACP.

Due to a large and concentrated black population, service businesses also thrived during this era. The 1940 Hill's *Richmond City Directory* identifies 107 black retail or service related businesses along the streets of 1st, 2nd, 3rd, Clay and Leigh. This large number does not include those businesses that were operated out of an individual's home and thus were not given a listing. In some instances a business formed overnight when a local segregated practice created a need within the community. Such was the case of the Manhattan Car for Hire company, which seven men formed when white owned cab companies refused to pick-up black passengers. The business, using the owner's personal black Packards, operated out of 520 North 2nd Street

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(demolished) from 1927 through the 1950s. Cab company executive Edward L. Slade, Jr. served as president of the Richmond Branch NAACP in the 1960s and was instrumental in organizing the bus caravan of demonstrators to the 1963 Civil Rights March on Washington.

Central to the social life of Jackson Ward were the theaters, restaurants, clubs, and hotels along the three blocks of N. 2nd Street between Clay and Leigh Streets. Interviews relate that "Two Street" never closed during the World War II years, as patrons and soldiers on leave would cross back and forth going from club to club, to the Hippodrome theater, and to restaurants and hotels. The Hippodrome booked the big entertainers of the time, including Duke Ellington, Billie Holiday, Nat King Cole, and Louis Armstrong, who then stayed at a 2nd Street hotel. In Richmond, only hotels located in Jackson Ward were open to African Americans. Most prominent of these were Slaughters (now demolished), Eggleston (JWHD, NHL), and Harris (now demolished).

Neverett Eggleston, owner of the Eggleston Hotel at 539 - 541 North 2nd Street, began his career by first managing the hotel when it was Miller's Hotel and then purchasing it. While making his hotel and its restaurant, Neverett's Place, one of the favorite spots along 2nd Street, he continued to purchase and develop commercial property in Jackson Ward. In 1954, he extensively remodeled the Eggleston Hotel creating a new facade in keeping with the modern architecture of the time. Neverett Eggleston, Jr. continued in his father's footsteps by investing in property and in 1964 built Motel Eggleston at 604 - 606 North 2nd Street. A third major property owner of the era was James R. Stallings who developed both housing and commercial properties. Stallings purchased his first house in the 1940s. In addition to rental housing, he invested in historic commercial properties purchasing the Hippodrome, St. Luke's Building, and Slaughter's Hotel as they became available. Stallings also constructed numerous new buildings in Jackson Ward, including apartments and retail space.

As an African American community, Jackson Ward has influenced thoughts and events far beyond its borders. When the number of African Americans purchasing property and establishing businesses grew in the 1900s, Jackson Ward became known as a black financial and entertainment center. The combination of successful businesses, influential churches, and fraternal organizations created an atmosphere in which educated black professionals could challenge Jim Crow laws and change history. Jackson Ward attorneys and businessmen not only participated in the Civil Rights movement, but were leaders in the key areas of litigation and voter registration. These achievements and the ongoing commitment of Richmond's African American citizens to Jackson Ward are recognized in this National Register Historic District amendment.

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#### PHOTOGRAPHIC INDEX

The following information is the same for all photographs:

Property:

Jackson Ward Historic District

Locaton:

Richmond, VA

Photographer:

Mary Harding Sadler

Date:

summer 2001

Negative no.:

19750

Negatives are stored at the Virginia Department of Historic Resources

Photo:

1 of 4

Subject:

Virginia Mutual Beneficial Life Insurance Company Building

Location:

110-112 East Clay Street

Photo:

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Subject:

Doctors Howlette and Thornton Medical Offices

Location:

206-208 East Clay Street

Photo:

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Subject:

Sheffield Office Building

Location:

12-14 West Leigh Street

Photo:

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Subject:

The Hippodrome

Location:

North 2<sup>nd</sup> Street